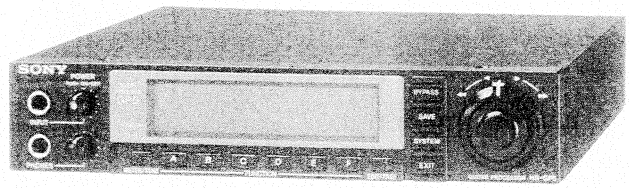
HR-GP5

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model



SPECIFICATIONS

A/D converter	1 bit, 64x oversampling (18-bit resolution)
D/A converter	Advanced pulse D/A converter (18-bit resolution)
Sampling frequency	48 kHz
Input terminals	
Standard jacks	Reference input level: -20 dBs Input impedance: 1 Mohm (front) 50 kohm (rear) Circuit type: Unbalanced
MIDI IN	5-pin DIN
REMOTE iN	8-pin MINI DIN
Output terminals	
Standard jacks	Reference output level: -20 dBs Output impedance: 1 kohm Circuit type: Unbalanced
PHONES	2 mW (8 ohm): With PHONES knob set to MAX. Output impedance: Compatible with both low impedance and high impedance headphones
MIDI OUT	5-pin DIN
Frequency response	20 Hz ~ 22 kHz
Signal-to-noise ratio	Greater than 90 dB
Dynamic range	Greater than 90 dB
Distortion	Less than 0.01% (1 kHz)
Memory	
Preset program	100 locations
User program	100 locations
Power source	DC 9V
Power consumption	6 W
Max. dimensions	220 x 44 x 250 mm (W x H x D) (unincluding projections)
Weight	Approx. 2.0 kg
Accessories	AC adapter AC-970 (1) User's Guide (1) Preset Program Chart (1)

Design and specifications subject to change without notice.

MICROFILM

GUITAR PROCESSOR

SONY®

TABLE OF CONTENTS

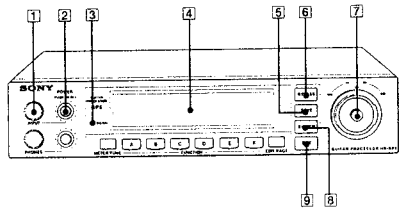
Section	Title	Page
1.	GENERAL	
	Names and Fuction	3
	Connections	4
	Play Mode	4
	Edit Mode	5
	Save Mode	8
	System Mode	8
	MIDI Control	9
	Overall Signal Flow	10
	Effect Parameters	10
	Terminology and Parameter Descriptions	18
	GUITAR PROCESSOR HR-GP5 MIDI Implementation Chart	22
2.	DIAGRAMS	
2-1.	Block Diagram	23
2-2.	Printed Wiring Boards	26
2-3.	Schematic Diagram	29
2-4.	IC Block Diagrams	33
2-5.	IC Pin Function	
	• IC502 Digital Signal Processor (CXD2705AQ)	35
2-6.	Semiconductor Lead Layouts	37
3.	EXPLODED VIEW	
3-1.	Cabinet Assembly	38
4.	ELECTRICAL PARTS LIST	39

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
GENERAL

This section is extracted from instruction manual.



10

Names and Function

Frontpanel

1 INPUT Jack
Jack for high impedance input. When connecting a guitar or a bass guitar directly, connect the input cable to this jack.

2 POWER Switch/Input Level Adjustment Knob
Press this switch to turn the power on and off. When the power comes on, the backlight illuminates the display window and the contents of memory saved when the power was last turned off are recalled.
Turn the knob to the left or right to adjust the input level.

3 SIGNAL Lamp
This LED lights green, orange or red depending on the strength of the input or output level. Adjust the level so that the lamp does not continuously stay red.
(See page 18)

4 Display Window
This window displays various information such as the recalled memory address name, parameter setting value and messages.

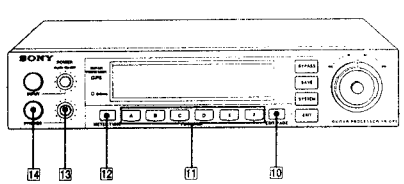
5 SAVE Button
When you create an original effect by changing parameters, press this button to save the effect in the user memory area.
(See page 48)

6 BYPASS Button
Pressing this button cuts the effect by routing the signal around the effect processing circuitry so that the input signal is output unchanged.

7 Operation Dial/Shuttle Ring
Used for various operations such as selecting memory address numbers and parameters and making parameter settings. The operation dial is used for changing the setting value in one-step increments, and the shuttle ring is used for rapidly increasing or decreasing the setting value. The speed of change varies according to the angle of the shuttle ring.

8 SYSTEM Button
Sets the unit's operating environment.
(See page 52)

9 EXIT Button
Press after or during a setting procedure to return to the previous screen or mode.



12

Names and Function

Frontpanel

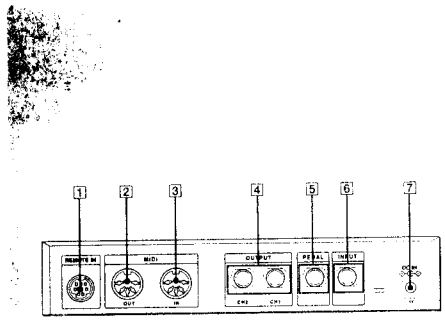
10 EDIT/PAGE Button
Selects the Edit mode and switches between Edit mode and Edit Page mode.

11 FUNCTION (A-F) Buttons
Use to select various functions in Edit mode.

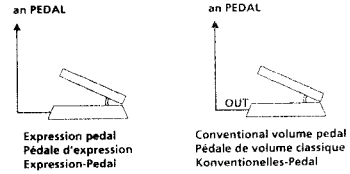
12 METER/TUNE Button
Press once to display the input level, press twice to display the output level and press three times to display the tuner function.

13 PHONES Level Adjustment Knob
Adjusts the volume level of the headphones.

14 PHONES Jack
For connection of a pair of headphones.



A



Expression pedal
Pédale d'expression
Expression-Pedal

Conventional volume pedal
Pédale de volume classique
Konventionelles-Pedal

14

Names and Function

1 REMOTE IN Terminal
For connecting the HR-RC5 dedicated remote controller (sold separately). Connecting the remote controller enables you to perform panel operations from a distance.

2 MIDI OUT Terminal
Outputs MIDI signals.

3 MIDI IN Terminal
Inputs MIDI signals. Use a commercially available MIDI cable to connect this terminal to another MIDI component's MIDI OUT (or THRU) terminal.

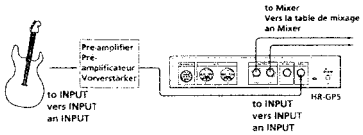
4 OUTPUT CH1/CH2 Jacks (Standard Jacks)
Standard output jacks for channel 1 and channel 2.

5 PEDAL Input Jack (Standard Jack)
Standard input jack for pedal switch or pedal volume.
Note:
When connecting a pedal, be sure to use a pedal with a resistance value of 20k ohms or greater. Pedals with lower resistance values may not provide the desired effect.
Use an expression pedal or a conventional mechanical volume pedal. When connecting a volume pedal, connect the cable to the pedal's "out" jack. Do not connect anything to the pedal's "in" jack.
Electronic volume pedals cannot be used.

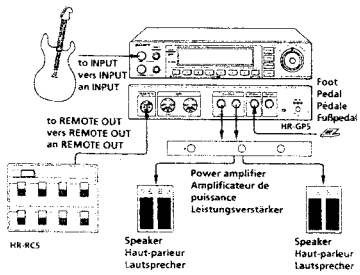
6 INPUT Jack (Standard Jack)
Jack for low impedance input. When using a input source through other effecters, pre-amplifier or wireless system, connect the input cable to this jack.

7 DC IN Jack
For connecting this unit to a power outlet using the supplied AC adapter.

Connection 1: Connecting to the rear panel
Raccordement 1: Raccordement au panneau arrière
Anschluß 1: Anschließen an der Rückseite



Connection 2: Connecting to the front panel
Raccordement 2: Raccordement au panneau avant
Anschluß 2: Anschließen an der Vorderseite



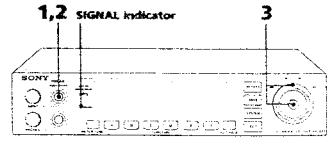
Connections

This unit comes with 100 preset effects already stored in memory. To listen to them, follow the instructions in the "Basic Connections," "Memory (Preset Effect) Selection," and "Using the Tuner" sections below.
Due to specification changes, the names of the preset effects mentioned in this manual may differ from the actual product. For the actual preset memory contents, refer to the preset memory list supplied separately with this manual.

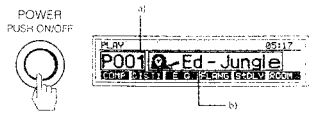
Notes on Making Connections:

- Before connecting this unit to another device, unplug the AC adapter from the power outlet.
- Also, turn off all the power switches of this unit and the components to be connected such as keyboards and active speakers (speakers with built-in power amplifiers).
- After all connections are completed, double check that the connections are correct, then plug the AC adapter back into the power outlet.
- Connected components may output large signals that cause distortion. If distortion occurs, adjust the input knob on this unit to lower the input level, or lower the output level of the connected component.

- When connecting a guitar or bass guitar directly, connect the input cable to the INPUT jack on the front panel of the unit.

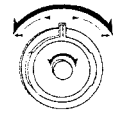


1

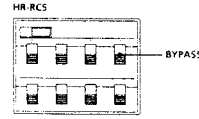


2

3



A



Play mode

Selecting the memory (memory preset)

1 Press the POWER button to turn on the power.
The PLAY screen is displayed.
a) Memory number
b) Program name

2 Turn the INPUT knob to adjust the input level.
Adjust so that the signal to input does not light red. This adjustment affects the quality of the effect. To obtain a proper effect, never use this control for other purpose such as to adjust the output volume.

Input level and signal lamp relationship

Signal lamp indicator	Input level
Lights red continuously	Too high
Lights red occasionally/ Lights green or orange	Correct
Only lights green	Too low

3 Turn the operation dial or use the shuttle ring to select the desired memory number (P1–P100, U1–U100*).
*U1–U100 are user programs available. Only those memories which contain an effect can be selected. (See page 16.)

Before turning on the power of connected components
Set the volume levels of the connected components to a low level to avoid unintentionally outputting a large sound.

To directly output the input signal (Bypass) A
Press the bypass button. The input signal is output directly without being processed by the effect circuitry. Press again to cancel the bypass mode.
When using the dedicated HR-RC5 remote controller (optional), press the controller's BYPASS switch. Press again to cancel the bypass mode.

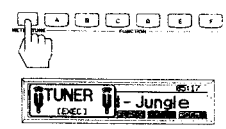
Play mode

To display the level meter

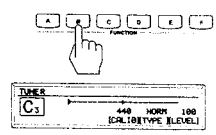
Press the METER/TUNE button.
Press once to display the input level meter in the display window.
Press again to switch the display to the output level meter.
Press a third time to change the level meter display into the tuner display.
Press once more to return to the original display.
The operation of the signal lamp changes when the METER/TUNE button is pressed as shown in the table below.

Press the METER/TUNE button	Display	SIGNAL indicator
Once	INPUT Level Meter	INPUT Level
Twice	OUTPUT Level Meter	OUTPUT Level
3 times	Tuner	INPUT Level
4 times	Normal display	INPUT Level

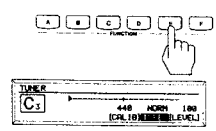
1



2



3



4

5

Play mode

Using the Tuner

1 Press the METER/TUNE button a few times until the tuner display appears.
Each press of the button switches the display in the following order: input level meter display, output level meter display, tuner display.

2 Press the FUNCTION B button to activate the tuner.

3 Set the parameters.
(If the displayed parameters do not need to be changed, this step is not required.)
Press the appropriate FUNCTION button (D–F) to select the desired parameter, then turn the operation dial or operate the shuttle ring to set the desired value.

4 Input a sound (a single tone) from the musical instrument.
The name of the closest pitch is displayed. Tune the instrument so that the correct pitch name is displayed and the indicator comes to the center of the display.
a) Lower than the displayed pitch
b) Tuned correctly to the displayed pitch
c) Higher than the displayed pitch

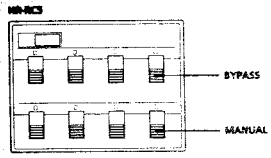
Set the input level relatively high, but not so high as to cause distortion.
When tuning a guitar, carry out tuning the front pickup whenever possible.

5 When finished tuning, press the EXIT button.
The original display returns.

Parameter settings

CALIB (calibration):
Sets the A4 reference pitch. Set in the range of 435–445Hz.
TYPE (tune type):
Select NORMAL, b (flat) or bb (double flat). With this function you can perform flat or double flat tuning using the normal tuning display.
LEVEL (output level):
Sets the output level. (When using the tuner, all effects are turned off.)

*All parameter settings are memorized.
*Tuning example: Tuning a guitar normally (open strings) — 6th string: E2; 5th string: A2; 4th string: D3; 3rd string: G3; 2nd string: B3; 1st string: E4



Play Mode

To activate the tuning mode with the HR-RC5 dedicated remote controller
Simultaneously press the BYPASS switch and MANUAL switch.
The tuning status of the input signal is displayed on the HR-RC5's LEDs.

Keytop LED ... Indicates the closest string.

1/A	1 E string
2/B	2 B string
3/C	3 G string
4/D	4 D string
5/E	5 A string
BANK UP/F	6 E string

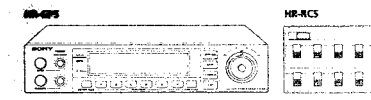
The string display indicates the sound range of a standard guitar.
For tuning a bass guitar, use the 12th fret harmonics (one octave up).

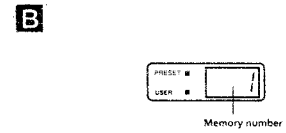
3-digit LED ... Indicates the tuning status.

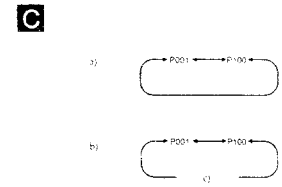
---	The input level is too low (cannot detect the pitch)
▶	The pitch is more than ±50 cents away from the displayed string.
I	The pitch is within ±50 cents of the displayed string.
II	The pitch is within ±10 cents of the displayed string.
III	The pitch is within ±2 cents of the displayed string. (Tuned)
PRESET/USER ...	Indicates whether the pitch is high, low or tuned.
OFF OFF	The input level is too low (cannot detect the pitch).
OFF ON	The pitch is low.
ON ON	The pitch is within ±2 cents of the displayed string. (Tuned)
ON OFF	The pitch is high.

To return to normal operation (to leave tuning mode), press the MANUAL switch.

* Even when the tuning mode is activated by operating switches on the main unit, the tuning indicators appear on the remote controller. Also, you can leave tuning mode by operating the HR-GP5 main unit.







Play mode

Recalling Effects From Memory

Recall the desired effect.

Using the HR-GP5 main unit:
Turn the operation dial or use the shuttle ring to select the desired memory number (P1–P100, U1–U100). A
The selected effect is recalled from memory. If ENTER LOAD has been selected with the system mode's setup function (see page 51), press the FUNCTION F button after selecting the memory number.

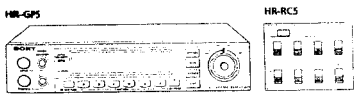
* U001–U100 are user memory numbers. Only those numbers which contain effects can be selected. (See page 48)

Using the dedicated HR-RC5 remote controller: B
Check to make sure the MANUAL lamp is extinguished, then press the 1/A–5/E pedal. When the pedal is pressed, the 1st–5th number of the bank is selected and displayed in the window.

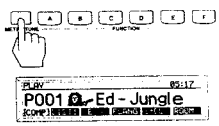
* A bank is a group of five programs. To move to the next higher bank, press the BANK UP/F pedal. To move to the next lower bank, press the 5/E pedal while holding down the BANK UP/F pedal.

Memory number display C
Effects are stored in the preset memory numbers 1–100 at the factory. When the operation dial or shuttle ring is turned, the memory numbers are sequentially displayed in an endless cycle. If original effects have been stored in the user memory area, the valid user memory numbers are inserted after the preset memory numbers in the memory number sequence.

a) When shipped from the factory
b) When effects are stored in user memory
c) User memory



a)



Play mode

Turning Effects On and Off

This unit has 7 effect blocks. In addition, for distortion type and equalizer type effects, you can select from 2 order patterns, and for modulation-reverb type effect, 14 connecting patterns ("structure"), total 38 patterns are available. You can turn each effect functions on and off to change the sound characteristics.

Using the HR-GP5 main unit:
Press the appropriate FUNCTION (A–F) button in play mode, so that the effect you want to turn off changes from a black and white reversed display to a bracketed ([ ]) display.

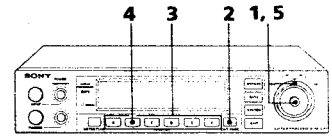
Example: Turning off the compressor function. (Fig. a))

Turning on and off the effect with the dedicated HR-RC5 remote controller
1 Step on the MANUAL pedal so that the MANUAL lamp lights.
2 Step on the effect pedals (1/A, 2/B, 3/C, 4/D, 5/E or UP/F) to be canceled.

Lamp lights in red	Effect on
Lamp lights in green	Effect off
Lamp goes out	The block has no effect.

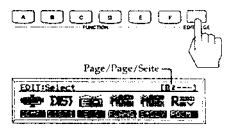
To turn on the effect again
Step on the FUNCTION A – F button so that the effect you want to turn on changes from a bracketed ([ ]) display to a black and white reversed display.

Effect on/off settings
For the effect on/off settings, press the FUNCTION A button in step 4 on the next page.

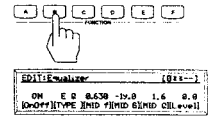


1

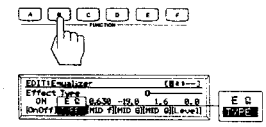
2



3



4



5

Edit mode

You can modify the preset programs and obtain the desired effect.

Changing the Effect Type

You can change the effect type of Compressor, Distortion, Equalizer, Modulation 1, Modulation 2, and Reverb effects.

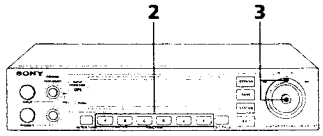
1 Turn the operation dial or use the shuttle ring to select the desired memory number (P1–P100, U1–U100*).
* U1–U100 are user memory numbers. Only those numbers which contain an effect can be selected. (See page 48)

2 Press the EDIT/PAGE button.
The "EDIT: Select" screen is displayed. The number in the upper right corner of the display window indicates the number of pages (number of basic screens) used by the edit function. The number blacked in reversed video indicates the currently open page. Pressing the EDIT/PAGE button again displays the "EDIT: Select" screen of the second page (see pages 38). Pressing the EDIT/PAGE button once more (for the third time) returns to the "EDIT: Select" screen of the first page.

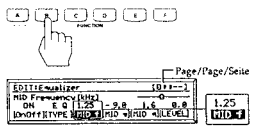
3 Select the effect by pressing the FUNCTION (A-F) button.
Example: Select EQ (equalizer).

4 Press the FUNCTION B button so that the [TYPE] display changes to a black and white reversed display.

5 Turn the operation dial or use the shuttle ring to select the desired effect type.



2



3

Regarding the preset values of each parameter, refer "Effect Parameters" (pages 68 to 99).

1 Perform steps 1-3 of the "Changing the effect type".

2 Select the parameter you want to change by pressing the corresponding function button.
The name of the selected parameter changes to a reversed video display.
Example: Changing the setting of the "MID frequency [kHz]" parameter.

The number in the upper right corner of the display window indicates the number of pages (number of basic screens) used for the effect. The number blocked in reversed video indicates the currently open page. Pressing the EDIT/PAGE button opens the next page and displays a different set of parameters. Each press of the EDIT/PAGE button moves on to the next page. When the last page is reached, pressing the EDIT/PAGE button returns to the first page.

3 Turn the operation dial or use the shuttle ring to change the setting of the parameter.

To change another parameter on the same page of the same effect
1 When finished changing the previous parameter, select the next parameter to change by pressing the corresponding FUNCTION (A-F) button.
2 Use the operation dial or shuttle ring to change the parameter setting.

To change another parameter on another page of the same effect
1 When finished changing the previous parameter, press the EDIT/PAGE button to open another page.
2 Select the next parameter to change by pressing the corresponding FUNCTION (A-F) button.
3 Use the operation dial or shuttle ring to change the parameter setting.

To change the parameter of a different effect
1 When finished changing the previous parameter, press the EXIT button to return to the "EDIT: Select" screen.
2 Select the next effect by pressing the corresponding the FUNCTION (A-F) button.
3 If necessary, press the EDIT/PAGE button to open another page.
4 Select the parameter to be changed by pressing the corresponding FUNCTION (A-F) button.
5 Use the operation dial or shuttle ring to change the parameter setting.

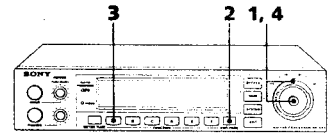
To return to the "PLAY" screen after changing parameters
When finished changing parameters, press the EXIT button twice.
The display returns to the "PLAY" screen, where you can use the operation dial or shuttle ring to select another effect from memory.
Changes made to parameter settings are temporary, and are replaced by the original settings as soon as you select another memory effect. To save your parameter setting changes, use the "Save" function (see page 48).

To quit making changes and return to the original memory settings
To return to the original parameter setting after making changes which have not yet been saved, press the EXIT button until the unit returns to play mode ("PLAY" screen), then select another effect from memory.
The next time you return to the previous effect, the settings will be set to their original values.

To compare the effect of the modified settings with the original settings (memory comparison)
1 After making the desired parameter changes, select the last page using the EDIT/PAGE button.
2 Press the FUNCTION E button. "Compare" is displayed on the screen, and you can listen to the sound processed by the original, unedited effect.
3 Press the FUNCTION E button again to return to the sound processed by the current setting values.

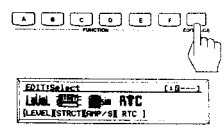
To change two parameters simultaneously (parameter linking)
If the same type of parameter selected by the FUNCTION (A-F) button also exists on another channel, you can link the two parameters so that changes made to parameter settings on one channel will automatically be mirrored on the other channel.
Parameter linking is carried out by pressing the FUNCTION (A-F) button of the currently selected parameter (indicated by reversed video) again. The screen display of a linked parameter displays both "CH1" and "CH2" in reversed video.
To unlink a parameter, press the same FUNCTION (A-F) button again or press a different function button.

To copy or initialize an effect
In System mode, you can use the COPY function (see page 56) to copy the entire contents of a memorized effect.
In Edit mode, you can copy only the effect block currently being edited.
1 Perform steps 1–3 of the "Changing the Effect Type" procedure (see page 30).
2 Press the EDIT/PAGE button to select the last page.
3 Select the COPY function.
4 Press the FUNCTION A button, then use the operation dial and shuttle ring to select the memory location you want to copy. (The memory location after U100 is "Initialize Data." Selecting this item will initialize all parameters other than ON/OFF and TYPE.)
5 Press the FUNCTION F button to copy (or initialize) the memory contents.

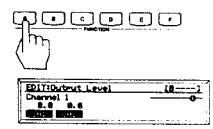


1

2



3



4

Setting the Output Level

Use this procedure to independently adjust the output level of each memory effect.

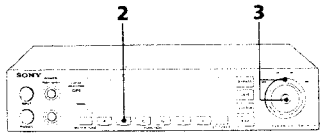
1 Turn the operation dial or use the shuttle ring to select the desired memory number (P1–P100, U1–U100*).
* U1–U100 are user memory numbers. Only those numbers which contain an effect can be selected. (See page 48.)

2 Press the EDIT/PAGE button twice.
The "EDIT: Select" screen is displayed. The number in the upper right corner of the display window indicates the number of pages (number of basic screens) used by the edit function. The number blocked in reversed video indicates the currently open page. Pressing the EDIT/PAGE button again displays the "EDIT: Select" screen of the first page (see pages 30). Pressing the EDIT/PAGE button once more (for the fourth time) returns to the "EDIT: Select" screen of the second page.

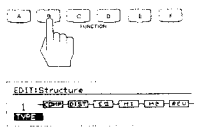
3 Press the FUNCTION A button.
Both CH1 and CH2 change to a black and white reversed display (parameter link function) and parameters for both channels can be changed at the same time.

4 Turn the operation dial or use the shuttle ring to adjust the output level of the both channels simultaneously.

To adjust the output level of just one channel
After performing steps 1-3, select the channel you want to adjust by pressing the corresponding FUNCTION A or B button. The indicator of the selected channel changes from reversed video to a bracketed ("[ ]") display. Continue the procedure from step 4.



2



3

Edit mode

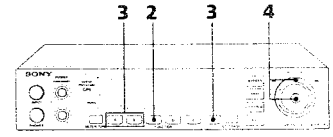
Changing the Structure (Connection Configuration)

With the following procedure you can change the connecting order of DIST and EQ and the structure of the effect blocks A(COMP, A(CS2, B(EX) respectively. When making selections, refer to the "Overall Signal Flow" diagram in page 69 and the indications in the main unit's display window.

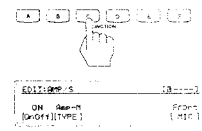
1 **Perform steps 1 and 2 of the "Setting the output level".**

2 **Press the FUNCTION B button.**

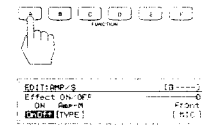
3 **Turn the operation dial or use the shuttle ring to select the structure.**



2



3



4

Edit mode

Changing Settings of the amplifier simulator

With the following procedure you can change the ON, OFF, type etc. of the amplifier simulator.

1 **Perform steps 1 and 2 of the "Setting the output level".**

2 **Press the FUNCTION C button.**

3 **Press the FUNCTION A, B or F button so that [A], [B] or [F] changes to a black and white reversed display.**

4 **Turn the operation dial or use the shuttle ring to change ON/OFF, type or parameter selected in step 3. Regarding the setting, see pages 73 and 102.**

To change another parameter in the same "EDIT: Select" screen

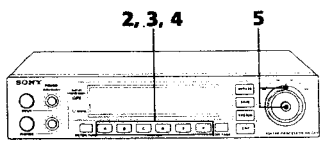
1 When finished changing the previous parameter, press the EXIT button to return to the "EDIT: Select" screen.
2 Select another parameter by pressing the corresponding the function button (A to F).
3 Use the operation dial or shuttle ring to change the parameter setting.

To return to the "PLAY" screen after changing parameters

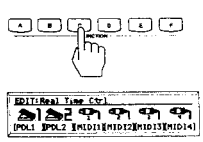
When finished changing parameters, press the EXIT button twice.
The display returns to the "PLAY" screen where you can use the operation dial or shuttle ring to select another effect memory.

To quit making changes and return to the original memory settings

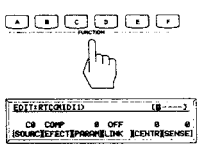
To return to the original parameter settings after making changes which have not been saved, press the EXIT button to return to play mode ("PLAY" screen), then select another effect memory. The next time you return to the previous effect, the settings will be set to their original state.



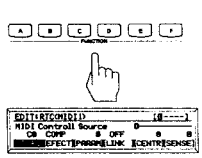
2



3



4



5

Edit mode

Changing Settings with Real Time Controller (RTC)

You can select the effect parameter controlled by remote control pedals, foot controller HR-RC5 or another MIDI device.

1 **Perform steps 1 and 2 of the "Setting the output level".**

2 **Press the function D button.**

3 **Select the desired controlling device by pressing the FUNCTION (A-F) button.**
Example: Select MIDI1.

4 **Select the desired item by pressing the corresponding FUNCTION (A-F) button so that the selected item changes to a black and white reversed display.**

5 **Turn the operation dial or use the shuttle ring to change the parameter of the item selected in step 4.**

Edit Mode

Controller related

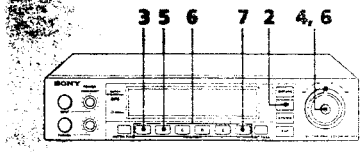
PDL1 (Pedal1)	Corresponds to the main unit's pedal input. When using the HR-RC5 remote controller, this parameter corresponds to the HR-RC5's PEDAL1 (the ...
PDL2 (Pedal2)	Corresponds to the HR-RC5's PEDAL2 channel.
MIDI1-4	Data can be set using input MIDI signals.

Parameter related

SOURC	Selects the MIDI parameter (control change number, note number, etc.) (No display when PEDAL1 or 2 is selected.)

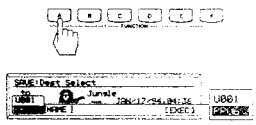
Display	Contents
C0–C31, C64–C120	Control change number
NoteN	Note number
NoteV	Note on velocity
BEND	Pitch bender
CHP	Channel pressure

EFECT	Selects the effect to control.
PARAM	Selects the desired parameter of the selected effect.
LINK	When working with linkable parameters, setting this to ON enables linking.
CENTR	Sets the parameter location that corresponds to the center of the MIDI data or pedal data.
SENS	Sets how the parameter will vary with respect to the movement of the MIDI data or pedal data.

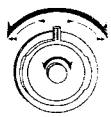


2

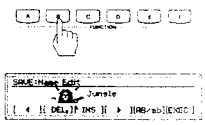
3



4



5



48

Save Mode

Effects created by changing parameter values with the edit function can be saved in the user memory area for later use.

1 Edit the parameters of a preset effect. (See pages 30-46)

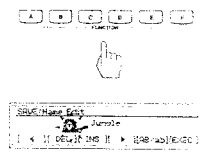
2 Press the SAVE button.
If a user memory number that already contains data is specified, the effect name and other information is displayed after the user memory number.

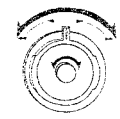
3 Press the FUNCTION A button.
The [PROG] indicator in the display window changes to a reversed video display, and the unit waits for you to specify a user memory number.

4 Use the operation dial or shuttle ring to select a user number for storing the effect.
Protected user memory numbers (indicated by a "🔒" symbol) cannot be used unless the protection is removed. You can remove the protection in system mode (see page 56).

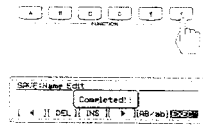
5 Press the FUNCTION B button. The "SAVE: Name Edit" screen appears and an icon appears in the display window.
Protected user memory numbers (indicated by a "🔒" symbol) cannot be used unless the protection is removed. (See page 56.)

6





7



50

Save Mode

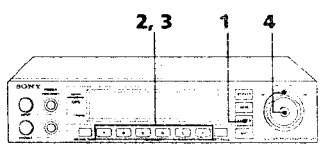
6 **Enter a name for the new effect.**

Operation dial or shuttle ring: Selects icons and characters.
FUNCTION A button: Moves the cursor (flashing point). Each press moves the cursor back to the previous position.
FUNCTION B button: Deletes the character at the cursor position (flashing point).
FUNCTION C button: Inserts a space at the cursor position (flashing point).
FUNCTION D button: Moves the cursor (flashing point). Each press moves the cursor forward one position.
FUNCTION E button: Switches between capital and small letters.
FUNCTION F button: Registers the name and returns to step 4.

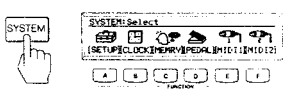
7 **When finished entering the name, press the FUNCTION F button.**
"Completed!" is displayed and the screen changes.

Memory protection function

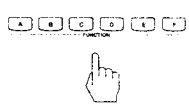
This function prevents accidental erasure of a user memory location that contains an effect you want to keep. Protected memory numbers cannot be used unless the protection is removed (by editing the user memory number in system mode) (see page 56).



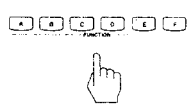
1



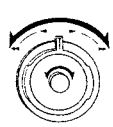
2



3



4



52

System Mode

This mode is used to configure the unit's system operation environments. To return to the previous screen during setup, press the EXIT button. To return to the play mode (PLAY screen) after finishing making settings, press the EXIT button a few times until you return to the play mode (PLAY screen).

1 Press the SYSTEM button.
The SYSTEM screen is displayed.

2 Select the function you want to set by pressing the corresponding FUNCTION (A-F) button.

FUNCTION A button: Sets the setup function. The "SYSTEM: Set Up" screen is displayed. (See page 54)
FUNCTION B button: Sets the time. The "System: Clock" screen is displayed. (See page 54)
FUNCTION C button: Edits the user memory. The "SYSTEM: Memory" screen is displayed. (See page 56)
FUNCTION D button: Sets the pedal settings. The "SYSTEM: Pedal" screen is displayed. (See page 58)
FUNCTION E button: Sets the MIDI 1 settings. The "SYSTEM: MIDI BASIC" screen is displayed. (See page 58)
FUNCTION F button: Sets the MIDI 2 settings. The "SYSTEM: MIDI RX-SW" screen is displayed. (See page 58)

3 Select the item you want to set from the screen displayed in step 2 by pressing the corresponding FUNCTION (A-F) button.

4 Turn the operation dial or use the shuttle ring to adjust or change the setting.

54

System Mode

Configuring the Setup Function

Three settings are possible on the "SYSTEM: Set Up" screen.

FUNCTION A button: Adjusts the display window contrast.
FUNCTION B button: Selects the display mode.
If "NAME" is selected, the screen displays only the memory location name in large characters.
If "INFO" is selected, the screen displays the memory name in regular characters as well as information such as the date the memory contents were created and whether the memory contents are protected or not.
FUNCTION C button: Selects the load form.
If "AUTO" is selected, an effect is automatically recalled from memory when the operation dial or shuttle ring is used to change the memory number in play mode.
If "ENTER" is selected, effects are recalled from memory in play mode by using the operation dial or shuttle ring to change the memory number and then pressing the FUNCTION F button. By pressing the FUNCTION A button before pressing the FUNCTION F button, you can check which effect is in the selected memory location before recalling it.
FUNCTION D button: Selects the amplifier simulator mode.
If OFF" is selected, the settings of the amplifier simulator are automatically canceled regardless of the settings stored in each memory and "AMP OFF" appears on the play mode display.
If "PGM" is selected, the settings of the amplifier simulator are set to the values stored in memory.

Setting the Time

This function is used to set the time and date of this unit's built-in clock. Once the clock is set, the time is automatically stored in the user memory when you create and save an effect.

FUNCTION A button: Sets the Month.
FUNCTION B button: Sets the Day.
FUNCTION C button: Sets the Year.
FUNCTION D button: Sets the Hour.
FUNCTION E button: Sets the Minute.
FUNCTION F button: Starts the clock after the settings are completed.

Editing the User Memory

This is a simple edit function for editing the user memory contents.

COPY—Memory Copy: (FUNCTION A button)
Copies the contents of the specified preset or user memory number to another memory number.
- FUNCTION A button: Specifies the preset or user memory number to copy from (SOURC: Source).
- FUNCTION B button: Specifies the user memory number to copy to (DEST: Destination).
- FUNCTION F button: Executes the copy function (EXEC: Execute).

MOVE—Memory Move: (FUNCTION B button)
Moves the contents of the specified user memory number to another memory number.
- FUNCTION A button: Specifies the user memory number to move from (SOURC: Source).
- FUNCTION B button: Specifies the user memory number to move to (DEST: Destination).
- FUNCTION F button: Executes the move function (EXEC: Execute).

XCHG—Memory Exchange: (FUNCTION C button)
Exchanges the contents of two user memory numbers.
- FUNCTION A button: Specifies the first user memory number to be exchanged (MEM1: Memory 1).
- FUNCTION B button: Specifies the second user memory number to be exchanged (MEM2: Memory 2).
- FUNCTION F button: Executes the exchange function (EXEC: Execute).

DEL—Memory Delete: (FUNCTION D button)
Deletes the contents of the specified user memory number.
- FUNCTION A button: Specifies the user memory number to be deleted.
- FUNCTION F button: Executes the delete function (EXEC: Execute).

PRTCT—Memory Protect: (FUNCTION E button)
Protects (locks) the contents of the specified user memory number.
(When a user memory number is protected, new effects cannot be saved to that memory number, and the contents of that memory number cannot be deleted or copied.)
- FUNCTION A button: Specifies the user memory number to protect.
- FUNCTION B button: Turns the protect status on and off.

Pedal Settings

This function makes settings for receiving data from the pedal(s).
FUNCTION A button: Selects the pedal configuration.
FUNCTION B button: Measures the setting for when the pedal is in the "up" position.
FUNCTION C button: Measures the setting for when the pedal is in the "down" position.

Pedal configurations

Configuration	CC	Given Number
Single		Pedal number (single pedal)
Double		Pedal number (double pedal)
Triple		Pedal number (triple pedal)
Foot SW		FOOT SW (foot switch)
Foot Vol		FOOT VOL (foot volume)

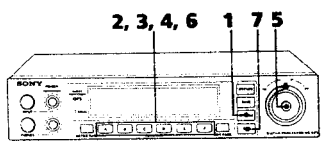
MIDI 1 Settings

Sets basic MIDI functions.
FUNCTION A button: Sets MIDI on or off.
FUNCTION B button: Sets the MIDI channel.
Note:
When transmitting bulk data (to save the MIDI channels on the system), for example, even with OMNI set to ON, data cannot be transmitted to different MIDI channels simultaneously for sending and receiving.
FUNCTION C button: Sets the memory number corresponding to the MIDI program change number 1–128.
FUNCTION A button: Sets the MIDI program change number.
FUNCTION B button: Sets the memory number.
FUNCTION D button: Transmits bulk dump data.
FUNCTION A button: Selects the type of bulk dump data to be sent.
FUNCTION B button: Starts transmission.
FUNCTION E button: Receives bulk dump data.
This mode enables bulk dump data to be input.
- The signal lamp lights red while bulk dump data is being received.

MIDI 2 Settings

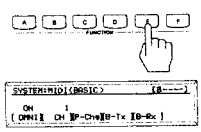
Configures settings for receiving MIDI data.

Sets basic MIDI functions.
FUNCTION A button: Sets program change receiving on or off.
FUNCTION B button: Sets control change receiving on or off.
FUNCTION C button: Sets channel pressure receiving on or off.
FUNCTION D button: Sets pitch bend control receiving on or off.

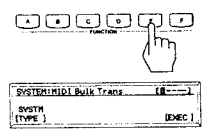


1

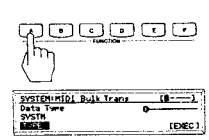
2



3



4



This unit is capable of many types of control through the MIDI interface. Basic MIDI settings (MIDI channel, etc.) are set in the MIDI 1 and MIDI 2 system modes. For precise MIDI program change control, the system takes advantage of the unit's large preset/user memory capacity and allows each of the MIDI program change numbers (1-128) to be assigned to a separate internal memory number. These assignments are made in the system mode's MIDI 1 block.
Using MIDI control change data such dampers and modulation wheels, characteristics such as the depth of an effect can be controlled in real time. Since control conditions vary for each type of effect, control change assignments are made for each memory number. These settings are made in the edit mode's RTC (real time controller) block (see page 44). Four channels are provided for MIDI control, with selection of the control source (i.e., which MIDI data to use for control), setting of the variation range, and selection of the control destination (i.e., which parameters to control) carried out independently for each channel.

Transfer of MIDI Data

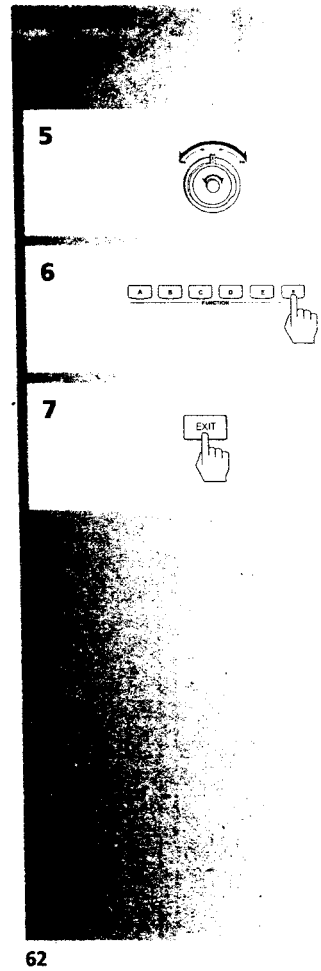
Sending data: MIDI bulk dump tranfer

1 Press the SYSTEM button.

2 Press the FUNCTION E button.

3 Press the FUNCTION D button.

4 Press the FUNCTION A button.



5 Turn the operation dial or use the shuttle ring to select the data type.
You can select from the following data types.

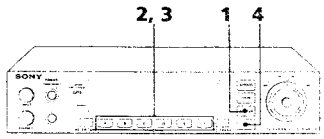
U1	No.1 of the user memory
U2	No.2 of the user memory
UXX	No.XX of the user memory
U100	No.100 of the user memory
U-ALL	All user memories
SYSTM	Setting the operating condition of the unit
ALL	"U-ALL" + "SYSTM"

6 When the desired data type is displayed, press the FUNCTION F.
"Transmitting..." is displayed and the selected data is transmitted from the MIDI OUT terminal.

7 When transmission is completed, press the EXIT button.

Note:
Be sure to set the MIDI channel to the same value used when receiving.
The OMNI mode is ignored when bulk data is being transmitted.

MIDI Control



Receiving data: MIDI bulk dump receipt

1 **Press the SYSTEM button.**

2 **Press the FUNCTION E button.**

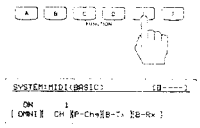
3 **Press the FUNCTION E button again.**
When "Receiving?" is displayed, the unit is in reception ready mode. If exclusive data such as bulk data from the MIDI IN terminal is received at this time, the front panel's signal lamp lights red.

4 **When receipt is completed, press the EXIT button.**

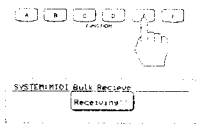
Note:
Be sure to set the MIDI channel to the same value used when receiving.
The OVRNI mode is ignored when bulk data is being transmitted.

1

2



3



4

Overall Signal Flow

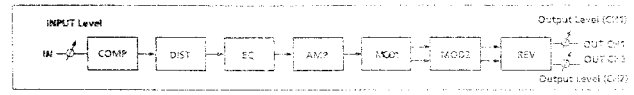
This unit contains 7 effect blocks which perform signal processing to add effects to the incoming signals. The signal processing flow differs depending on the order of distortion and equalizer type effects, and the structure (connection configuration) of the modulation, reverb and delay type effects. For instructions on how to change the structure (connection configuration), refer to page 46.

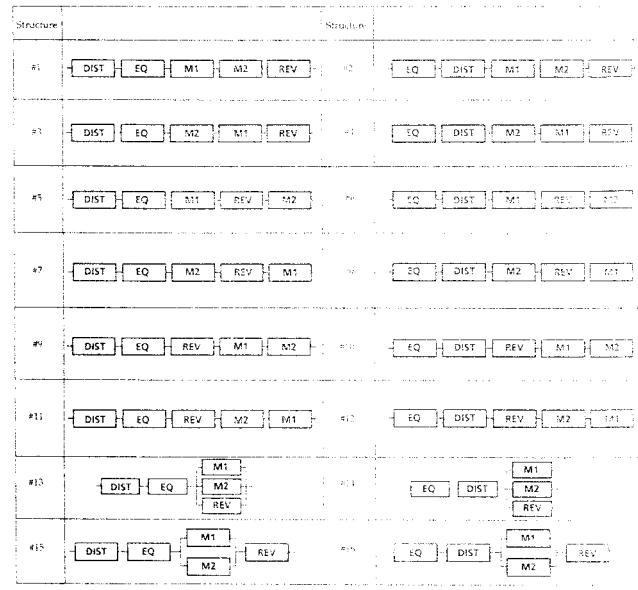
Organigramme global du signal

Cet appareil comporte 7 blocs d'effets principaux qui assurent le traitement du son ajoutant des effets aux signaux d'entrée. L'ordre de traitement du signal varie en fonction de la structure (configuration de branchement) de chacun des effets principaux. Pour plus de détails sur la manière de modifier la structure (configuration de branchement), reportez-vous à la page 46.

Übersicht über den Signalfluß

Dieses Gerät enthält 7 Effektblöcke, die eine Signalverarbeitung durchführen, um den eingehenden Signalen Effekte zu hinzuzufügen. Der Signalverarbeitungsablauf unterscheidet sich je nach der Struktur (Verbindungskonfiguration) der Distortion- und Equalizer-Effekte, sowie der Modulations-, Reverb- und Delay-Effekte. Anweisungen zur Änderung der Struktur (Verbindungskonfiguration) finden Sie auf Seite 46.

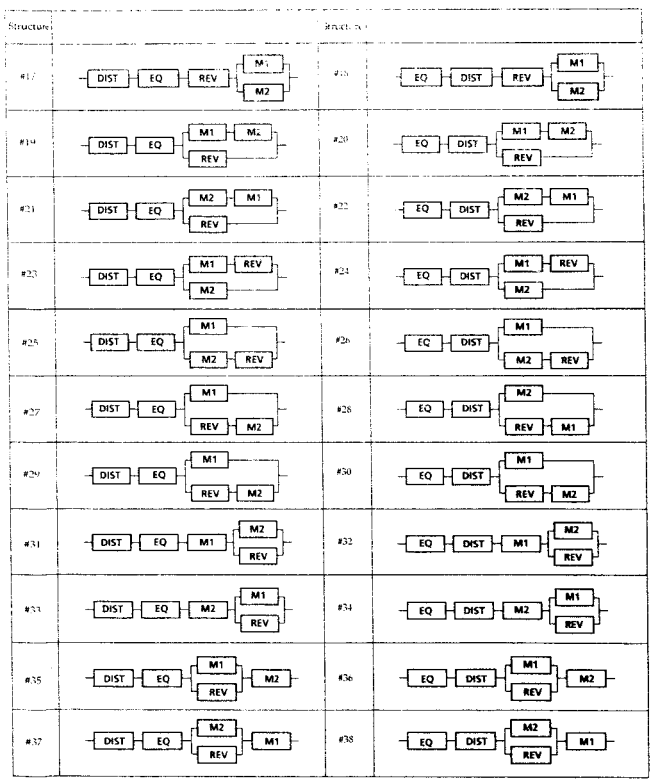




Overall Signal Flow

[illegible] global du signal

Übersicht über den Signalfluß



Effect Parameters

This unit contains a variety of built-in effects as listed in the table below. For descriptions of the effects, refer to the corresponding pages.

Paramètres d'effet

Cet appareil comporte [illegible] d'effets [illegible] reportez-vous à la page [illegible] pour la description des effets.

Effektparameter

Dieses Gerät enthält eine Vielzahl integrierter Effekte, wie in der nachstehenden Tabelle aufgeführt sind. Die Beschreibung der Effekte finden Sie auf der angegebenen Seite.

Block		Effect Name		Parameter Chart	Parameter Description
COMP		Compressor	COMP	69	100
		Limiter	LIMIT	69	100
		Slow Attacker	S.ATK	70	100
DISTORTION (DIST)		Crunch	CRNCH	71	100
		Overdrive1	OVD1	71	100
		Overdrive2	OVD2	71	100
		Overdrive3	OVD3	71	100
		Overdrive4	OVD4	71	100
		Distortion1	DIST1	71	100
		Distortion2	DIST2	71	100
EQ		Equalizer	EQ	72	101
		Exciter	EXCIT	72	101
		Wah	WAH	73	101
AMP		Amp-F		73	102
		Amp-B		73	102
		Amp-M		73	102
		Amp-J		73	102
MODULATION1 (MOD1)	Type 1	Chorus	CHORS	74	102
		Flanger	FLANG	75	103
		Phaser	PHASE	78	104
		Vibrato	VIBRT	80	105
		Tremolo	TREMO	80	105
		Auto Pan	A.PAN	81	105
		Slow Attacker	S.ATK	70	100
		Wah	WAH	73	101
		Modulation Delay	MODLY	89	108
		Ring Modulator	RING	98	112
	Type 2 (When using Type 2 effects, MOD2 block cannot be utilized.)	Intelligent Pitch Shifter	I.PCH	84	106
		Dual Pitch Shifter	D.PCH	83	106
		Dual Chorus	D.CHO	75	102
		Dual Flanger	D.FLN	77	103
		Dual Phaser	D.PHA	79	104
		Stereo Ensemble	StENS	81	105
		Tapped Delay	TpDLY	90	108
		Double Delay	DbDly	91	108
		Hold Delay	HdDLY	92	108
		Sweep Delay	SwDLY	93	108
		Rotary Speaker	ROTRY	98	112
		Reverse Shift	REVRS	85	106
MODULATION2 (MOD2)		Stereo Chorus	StCHO	74	102
		Stereo Flanger	StFLN	76	103
		Stereo Phaser	StPHA	78	104
		Pitch Shifter	PITCH	82	106
		Stereo Delay	StDLY	86	108
		Tempo Delay	TmDLY	87	108
		Ducking Delay	DcDLY	94	108
		Tapped Delay	TpDLY	91	108
REVERB (REV)		Hall Reverb	HALL	95	110
		Room Reverb	ROOM	95	110
		Plate Reverb	PLATE	96	110
		Gated Reverb	GtREV	97	111
		Stereo Delay	StDLY	86	108
		Tapped Delay	TpDLY	90	108
		Double Delay	DbDLY	91	108
		Ducking Delay	DcDLY	94	108
		Tempo Delay	TmDLY	86	108

Effect Parameters

COMP (Compressor)

This is a compressor which includes an attack time parameter.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	SENS	Sensitivity [%]	0 ~ 100
	D	ATK	Attack Time [msec]	0.1 ~ 50
	E			
	F	Level	Output Level [dB]	-21 ~ +6
2	A			
	B			
	C			
	D			
	E	CMPR	Compare	
	F	COPY	Copy	

LIMIT (Limitter)

This is a limitter which provides control of threshold and ratio parameters.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	THRS	Threshold Level [dB]	-72 ~ 0
	D	RATIO	Ratio	1:1 ~ 50:1, INF:1
	E			
	F	Level	Output level [dB]	-21 ~ +18
2	A	ATK	Attack Time [msec]	0.1 ~ 50
	B	REL	Release Time [msec]	0.1 ~ 500
	C			
	D			
	E	CMPR		
	F	COPY		

Paramètres d'effet

COMP (Compressor)

Il s'agit d'une compression qui ajoute un paramètre de temps d'attaque.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	SENS	Sensitivité [%]	0 ~ 100
	D	ATK	Attack Time [msec]	0,1 ~ 50
	E			
	F	Level	Output Level [dB]	-21 ~ +6
2	A			
	B			
	C			
	D			
	E	CMPR	Compare	
	F	COPY	Copy	

LIMIT (Limitator)

Il s'agit d'un limitateur qui régule les paramètres de seuil et de rapport.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	THRS	Threshold Level [dB]	-72 ~ 0
	D	RATIO	Ratio	1:1 ~ 50:1, INF:1
	E			
	F	Level	Output level [dB]	-21 ~ +18
2	A	ATK	Attack Time [msec]	0,1 ~ 50
	B	REL	Release Time [msec]	0,1 ~ 500
	C			
	D			
	E	CMPR		
	F	COPY		

Effektparameter

COMP (Kompressor)

Der Kompressor umfaßt auch einen Parameter für die Ansprechzeit.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	SENS	Sensitivity [%]	0 ~ 100
	D	ATK	Attack Time [msec]	0,1 ~ 50
	E			
	F	Level	Output Level [dB]	-21 ~ +6
2	A			
	B			
	C			
	D			
	E	CMPR	Compare	
	F	COPY	Copy	

LIMIT (Limiter)

Bei dieser Limiter können Sie die Parameter Schwellenwert (THRS) und Quotient (RATIO) steuern.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	THRS	Threshold Level [dB]	-72 ~ 0
	D	RATIO	Ratio	1:1 ~ 50:1, INF:1
	E			
	F	Level	Output level [dB]	-21 ~ +18
2	A	ATK	Attack Time [msec]	0,1 ~ 50
	B	REL	Release Time [msec]	0,1 ~ 500
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

S ATK (Slow Attacker)

This effect eliminates the sharp attack sound of the input signal, creating a sound similar to that produced by a violin.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	SENS	Sensitivity [%]	0 ~ 100
	D	ATK	Attack Time [msec]	10 ~ 5000
	E	REL	Release Time [msec]	10 ~ 5000
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Paramètres d'effet

S.ATK (Slow Attacker)

Cet effet élimine le son d'attaque brusque du signal d'entrée, créant un son similaire à celui produit par un violon.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	SENS	Sensitivity [%]	0 ~ 100
	D	ATK	Attack Time [msec]	10 ~ 5000
	E	REL	Release Time [msec]	10 ~ 5000
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effektparameter

S.ATK (Slow Attacker)

Dieser Effekt mildert die Schärfe des Eingangssignals, so daß in etwa der Klang einer Geige erzielt wird.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	SENS	Sensitivity [%]	0 ~ 100
	D	ATK	Attack Time [msec]	10 ~ 5000
	E	REL	Release Time [msec]	10 ~ 5000
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

CRNCH (Crunch), OVD1-4 (Overdrive 1-4), DIST1,2 (Distortion 1,2)

Crunch: Suitable to lightly distorted sound.
Overdrive 1: Overdrive effect similar to the distorted sound with the tube-amplifier.
Overdrive 2: Overdrive which has characteristic effect on mid-low frequencies.
Overdrive 3: Overdrive which has characteristic effect on mid frequencies.
Overdrive 4: Overdrive effect with slight treble noises.
Distortion1: Distortion sound such as a tube-amplifier at the full volume.
Distortion2: Suitable for heavy metal type guitar sound.

Paramètres d'effet

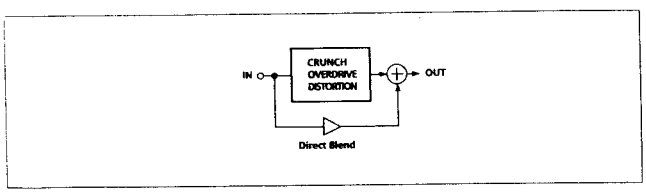
CRNCH (Crunch), OVD1-1 (Overdrive 1-4), DIST 1,2 (Distortion 1,2)

Crunch: convient pour un son légèrement déformé
Overdrive 1: Effet de surmodulation similaire au son déformé d'un amplificateur à tubes.
Overdrive 2: Surmodulation qui a un effet caractéristique sur les fréquences basses et moyennes.
Overdrive 3: Surmodulation qui a un effet caractéristique sur les fréquences moyennes.
Overdrive 4: Effet de surmodulation avec un léger bruit aigu.
Distortion 1: Déformation du son comme celui d'un ampli à tubes à pleine puissance.
Distortion 2: Convient pour le son de guitare type heavy metal.

Effektparameter

CRNCH (Crunch), OVD1-4 (Overdrive 1-4), DIST1,2 (Distortion 1,2)

Crunch: Erzeugt einen leicht verzerrten Klang.
Overdrive 1: Erzeugt eine Verzerrung, die ähnlich wie ein Röhrenverstärker klingt.
Overdrive 2: Wirkt sich vor allem auf den unteren Teil des mittleren Frequenzbereichs aus.
Overdrive 3: Wirkt sich vor allem auf den mittleren Frequenzbereich aus.
Overdrive 4: Overdrive-Effekt mit hohen Klängen.
Distortion 1: Entspricht den Verzerrungen, die mit einem Röhrenverstärker bei voller Leistung erzielt werden.
Distortion 2: Durch diesen Effekt wird ein Heavy Metal-Sound erzielt.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	GAIN	Gain [%]	0 ~ 100
	D	TONE	Tone	-10 ~ 10
	E	NR	Noise Reduction	0 ~ 100
	F	Level	Output Level [%]	0 ~ 100
2	A	BLEND	Direct Blend [%]	0 ~ 100
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

EQ (Equqlizer)

3 band equalizer with MID, HIGH (peaking type) and LOW (shelving type) bands.
When you increase the gain of each band and the output clips, lower the total level parameter.

EXCIT (Exciter)

This is a exciter which emphasizes the profile of the sound to create a modulated effect.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	MID f	MID Frequency [kHz]	0.063 ~ 12.5
	D	MID G	MID Gain [dB]	-24 ~ +12
	E	MID Q	MID Q	0.10 ~ 10.0
	F	LEVEL	Total Level [dB]	-24 ~ 0
2	A	LOW f	LOW Frequency [kHz]	0.031 ~ 0.30
	B	LOW G	LOW Gain [dB]	-24 ~ +12
	C	HI f	HIGH Frequency [kHz]	0.400 ~ 20.00
	D	HI G	HIGH Gain [dB]	-24 ~ +12
	E	HI Q	HIGH Q	0.10 ~ 10.0
	F			
3	A			
	B			
	C			
	D			
	E	CMPR	Compare	
	F	COPY	Copy	

Paramètres d'effet

EQ (Equalizer)

Egaliseur à 3 bandes avec bandes MID, HIGH (type de crête) et LOW (type en étages).
En augmentant le gain de chaque bande et les limites de sortie, vous diminuez le paramètre de niveau total.

EXCIT (Exciter)

Il s'agit d'un excitateur qui amplifie le profil du son pour créer un effet module

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	FREQ	Frequency	0,1 ~ 3,0
	D	EXCIT	Exciter Level	-100 ~ +100
	E	CMPR		
	F	COPY		

Effektparameter

EQ (Equalizer)

3-Band-Equalizer mit MID-, HIGH- (spitz) und LOW-Bändern (flach).
Wenn Sie die Verstärkung für jedes Band erhöhen und die Ausgangsleistung begrenzt ist, senken Sie den Parameterwert für die Gesamtleistung.

EXCIT (Exciter)

Der Exciter betont das Klangprofil und erzeugt damit einen Modulationseffekt.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	FREQ	Frequency	0,1 ~ 3,0
	D	EXCIT	Exciter Level	-100 ~ +100
	E	CMPR		
	F	COPY		

Effect Parameters

WAH (Wah) - EQ Block, MOD1 Block

This is a wah effect which uses a pedal to move a filter. In the MOD1 effect block, this effect is an auto wah and the filter moves according to the input envelope.

Manual Wah settings

The wah effect varies according to changes in the Manual parameter.

When controlling the sound externally with a MIDI signal or pedal, set RTC (Real Time Control) (see page 44) so that you can control the Manual parameter.

Auto Wah settings (MOD1 Block only)

Set the control source to a setting other than Manual.

Adjust the sensitivity according to the input source.

Paramètres d'effet

WAH (Wah) - EQ Block, MOD1 Block

Il s'agit d'un effet wah qui utilise la pédale pour déplacer un filtre. Dans le bloc d'effet MOD1, cet effet est un auto wah et le filtre se déplace en fonction de l'enveloppe d'entrée.

Réglages "Wah" manuels

L'effet "wah" varie en fonction des modifications du paramètre "Manual".

Dans le cas d'un contrôle extérieur du son à l'aide d'un signal MIDI ou d'une pédale, réglez RTC (Real Time Control) (→ page 45) de manière à commander le paramètre "Manual".

Réglages "Wah" automatiques

fonctionnement bloc MOD1)

Réglez la source de commande sur une autre position que "Manual". Réglez la sensibilité en fonction de la source d'entrée.

Effektparameter

WAH (Wah) - EQ-Block, MOD1-Block

Beim Wah-Effekt wird ein Pedal benutzt, um einen Filter zu bewegen. Im Effektblock MOD1 wird der Wah-Effekt automatisch erzeugt, und der Filter bewegt sich entsprechend der Eingangsmodulation.

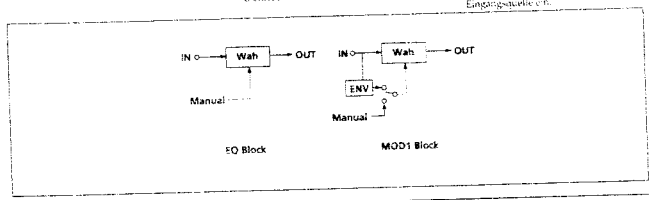
Manual Wah-Einstellungen

Der Wah-Effekt variiert entsprechend der Änderungen, die am Parameter Manual vorgenommen werden. Wenn Sie den Klang extern mit einem MIDI-Signal oder einem Pedal steuern, stellen Sie RTC (Real Time Control) so ein, daß Sie den Parameter Manual steuern können (siehe Seite 45).

Auto Wah-Einstellungen

(nur Block MOD 1)

Definieren Sie für "Control Source" einen anderen Wert als Manual. Stellen Sie die Sensitivität entsprechend der Eingangsquelle ein.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Mode	Wah Mode	NARROW, NORMAL, WIDE
	D	MANL	Manual [*1]	0 – 100
	E	*SENS	Sensitivity [*2]	-50 - 0 - +50
	F	*SOURC	Control Source	EN, MANUAL

*1 These parameters are added in the MOD1 effect block.

*2 Ces paramètres sont ajoutés au bloc d'effet MOD1.

*3 Diese Parameter werden dem Effektblock MOD1 hinzugefügt.

AMP (Amp Simulator)

This effect simulates the characteristics of a guitar amplifier.

AMP (AMP Simulator)

Cet effet simule les caractéristiques d'un ampli de guitare.

AMP (Amp Simulator)

Dieser Effekt simuliert die charakteristischen Merkmale eines Gitarrenverstärkers.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	Amp-E, Amp-B, Amp-M, Amp-J
	C			
	D			
	E			
	F	XPOS	Mic Position	Front, Slant, Upper, On

Effect Parameters

CHORS (Chorus)

This effector thickens the sound.
This is a monaural chorus effect.

Paramètres d'effet

CHORS (Chorus)

Cet effet épaissit le son.
Ceci est un effet de chœur monaural.

Effektparameter

CHORS (Chorus)

Dieser Effekt verleiht dem Klang mehr Volumen.
Hierbei handelt es sich um einen monauralen Chorus-Effekt.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [%]	0 - 100
	D	FREQ	LFO Frequency [Hz]	0.01 - 40.0
	E	Time	Delay Time [msec]	0 – 50.0
	F	E.BAL	Effect Balance	DRY, 99:1 – 1:99, EFF
2	A	Wave	LFO Waveform	SIN, TRI
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

StCHO (Stereo Chorus)

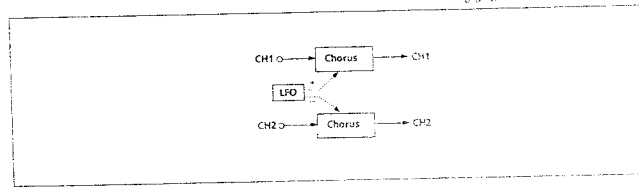
This effector expands and thickens the sound.
This is a stereo chorus effect where the LFO moves in opposite phase with respect to CH1 and CH2.

StCHO (Stereo Chorus)

Cet effet élargit et épaissit le son.
Ceci est un effet de chœur stéréo où LFO évolue en phase opposée en fonction de CH1 et CH2.

StCHO (Stereo Chorus)

Durch diesen Effekt erhält der Klang mehr Volumen und wird "erweitert".
Hierbei handelt es sich um einen Stereo-Chorus-Effekt, bei dem sich die LFO im Hinblick auf CH1 und CH2 in entgegengesetzter Phasenrichtung bewegt.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	DPTH1	Depth CH1 [%]	0 - 100
	D	DPTH2	Depth CH2 [%]	0 - 100
	E	FREQ	LFO Frequency [Hz]	0.01 - 40.0
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Time1	Delay Time CH1 [msec]	0 – 50.0
	B	Time2	Delay Time CH2 [msec]	0 – 50.0
	C	Wave	LFO Waveform	SIN, TRI
	D			
	E	CMPR	Compare	
	F	COPY	Copy	

Effect Parameters

D.CHO (Dual Chorus)

This effector is equipped with the independent chorus unit for each cannel and expands and thickens the sound.

Paramètres d'effet

D. CHO (Dual Chorus)

Cet effet est équipé d'un dispositif de chœur indépendant pour chaque canal et il élargit et épaissit le son.

Effektparameter

D. CHO (Dual Chorus)

Cet effet est équipé d'un dispositif de chœur indépendant pour chaque canal et il élargit et épaissit le son.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	DPTH1	Depth CH1 [%]	0 - 100
	D	DPTH2	Depth CH2 [%]	0 - 100
	E	Phase	LFO Phase Difference	0 - 180
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	FREQ1	LFO Frequency CH1 [Hz]	0.01 - 40.0
	B	FREQ2	LFO Frequency CH2 [Hz]	0.01 - 40.0
	C	Time1	Delay Time CH1 [msec]	0 - 50.0
	D	Time2	Delay Time CH2 [msec]	0 - 50.0
	E	DryD1	Direct Delay Time CH1 [msec]	0 - 500
	F	DryD2	Direct Delay Time CH2 [msec]	0 - 500
3	A	Wave 1	LFO Waveform CH1	SIN, TRI, EXP1, EXP2
	B	Wave 2	LFO Waveform CH2	SIN, TRI, EXP1, EXP2
	C			
	D			
	E	CMPR		
	F	COPY		

FLANG (Flanger)

This effector creates a sound similar to a jet airplane taking off or landing.
This is a monaural flange effect.

FLANG (Flanger)

Cet effet crée un son similaire à un avion à réaction qui décolle ou qui atterrit.
Ceci est un effet de flanger monaural.

FLANG (Flanger)

Durch diesen Effekt wird ein Klang erzeugt, der dem eines startenden oder landenden Düsenflugzeugs entspricht.
Hierbei handelt es sich um einen monauralen Flange-Effekt.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [%]	0 - 100
	D	FREQ	LFO Frequency [Hz]	0.01 - 40.0
	E	FBL	Feedback Level [%]	-99 - 0 - +99
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Time	Delay Time [msec]	0 – 20.0
	B	Wave	LFO Waveform	SIN, TRI, EXP1, EXP2
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

StFLN (Stereo Flanger)

This effector creates a sound similar to a jet airplane taking off or landing.
This is a stereo flange effect where the LFO moves in opposite phase with respect to CH1 and CH2.

Paramètres d'effet

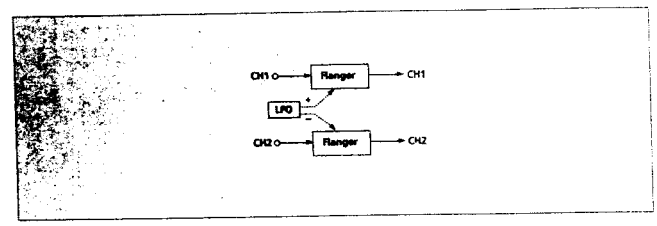
StFLN (Stereo Flanger)

Cet effet crée un son similaire à un avion à réaction qui décolle ou qui atterrit.
Ceci est un effet Flanger stéréo où LFO évolue en phase opposée en fonction de CH1 et CH2.

Effektparameter

StFLN (Stereo Flanger)

Durch diesen Effekt wird ein Klang erzeugt, der dem eines startenden oder landenden Düsenflugzeugs entspricht.
Hierbei handelt es sich um einen Stereo-Flange-Effekt, bei dem sich die LFO im Hinblick auf CH1 und CH2 in entgegengesetzter Phasenrichtung bewegt.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	DPTH1	Depth CH1 [%]	0 - 100
	D	DPTH2	Depth CH2 [%]	0 - 100
	E	FREQ	LFO Frequency [Hz]	0.01 – 40.0
	F	E.BAL	Effect Balance	DRY, 99:1 – 1:99, EFF
2	A	FBL 1	Feedback Level CH1 [%]	-99 - 0 - +99
	B	FBL 2	Feedback Level CH2 [%]	-99 - 0 - +99
	C	Time 1	Delay Time CH1 [msec]	0 - 20.0
	D	Time 2	Delay Time CH2 [msec]	0 - 20.0
	E	Wave	LFO Waveform CH2	SIN, TRI, EXP1, EXP2
	F			
3	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

D.FLN (Dual Flanger)

This effector is equipped with the independent flanger unit for each channel. The LFO frequency and waveform can be set separately for each channel. Also, you can add character to the flange effect by using the Direct Delay Time parameter to delay the direct sound so that it is output slightly after the effect sound.

Paramètres d'effet

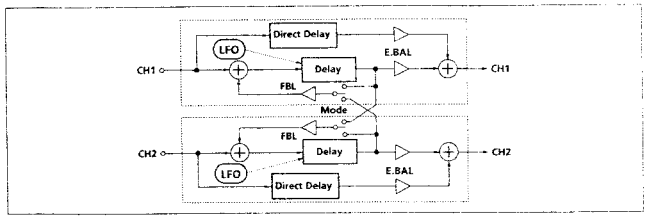
D.FLN (Dual Flanger)

Cet effet est équipé d'un dispositif flanger indépendant par canal.
La fréquence et la modulation LFO peuvent être réglées séparément pour chaque canal. De même, vous pouvez modifier l'effet "flange" en déphasant le son direct à l'aide du paramètre de temps de réponse direct de manière à ce qu'il sorte un peu après l'effet sonore.

Effektparameter

D.FLN (Dual Flanger)

Dieser Effekt wird dadurch erzielt, daß für jeden Kanal eine unabhängige Flanger-Einheit zur Verfügung steht.
Die LFO-Frequenz und -Wellenform können für jeden Kanal separat eingestellt werden. Mit Hilfe des Parameters Direct Delay Time können Sie den Flange-Effekt stärker betonen. Dabei wird der direkte Klang verzögert, so daß er erst nach dem eigentlichen Effekt ausgegeben wird.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	DPTH1	Depth CH1 [%]	0 - 100
	D	DPTH2	Depth CH2 [%]	0 - 100
	E	Phase	LFO Phase Difference	0 - 180
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	FREQ1	LFO Frequency CH1 [Hz]	0.01 - 40.0
	B	FREQ2	LFO Frequency CH2 [Hz]	0.01 - 40.0
	C	FBL 1	Feedback Level CH1 [%]	-99 - 0 - +99
	D	FBL 2	Feedback Level CH2 [%]	-99 - 0 - +99
	E	Time 1	Delay Time CH1 [msec]	0 - 20.0
	F	Time 2	Delay Time CH2 [msec]	0 - 20.0
3	A	DryT1	Direct Delay Time CH1 [msec]	0 - 500
	B	DryT2	Direct Delay Time CH2 [msec]	0 - 500
	C	Wave1	LFO Waveform CH1	SIN, TRI, EXP1, EXP2
	D	Wave2	LFO Waveform CH2	SIN, TRI, EXP1, EXP2
	E	Mode	Feedback Mode	NORMAL, CROSS
	F			
4	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

PHASE (Phaser)

This effector adds a phase-shifted signal to the direct sound to create an undulating effect.

Paramètres d'effet

PHASE (Phaser)

Cet effet ajoute un signal à décalage de phase au son direct pour créer un effet d'ondulation.

Effektparameter

PHASE (Phaser)

Bei diesem Effekt wird dem direkten Klang ein phasenverschobenes Signal hinzugefügt, so daß ein wellenartiger Klang entsteht.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	FREQ	LFO Frequency [Hz]	0.01 - 40.0
	D	Depth	Depth [%]	0 - 100
	E	MANUL	Manual [%]	0 - 100
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	RESO	Resonance [%]	-100 - 0 - +100
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

StPHA (Stereo Phaser)

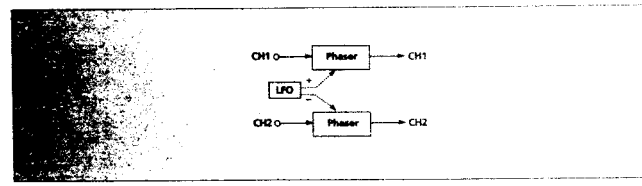
This effector adds a phase-shifted signal to the direct sound to create an undulating effect.

StPHA (Stereo Phaser)

Cet effet ajoute un signal à décalage de phase au son direct pour créer un effet d'ondulation.

StPHA (Stereo Phaser)

Bei diesem Effekt wird dem direkten Klang ein phasenverschobenes Signal hinzugefügt, so daß ein wellenartiger Klang entsteht.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	FREQ	LFO Frequency CH1 [Hz]	0.01 - 40.0
	D	DPTH1	Depth CH1 [%]	0 - 100
	E	DPTH2	Depth CH2 [%]	0 - 100
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	MANU1	Manual CH1 [%]	0 - 100
	B	MANU2	Manual CH2 [%]	0 - 100
	C	RESO1	Resonance CH1 [%]	-100 - 0 - +100
	D	RESO2	Resonance CH2 [%]	-100 - 0 - +100
	E	CMPR	Compare	
	F	COPY	Copy	

Effect Parameters

D.PHA (Dual Phaser)

This effector is equipped with the independent phase-shifter units for each channel and adds a phase-shifted signal to the direct sound to create an undulating effect.
The Step Frequency setting can be used to change the increment at which the tone is varied. (When set to OFF, a smooth variation in tone is obtained.)

Paramètres d'effet

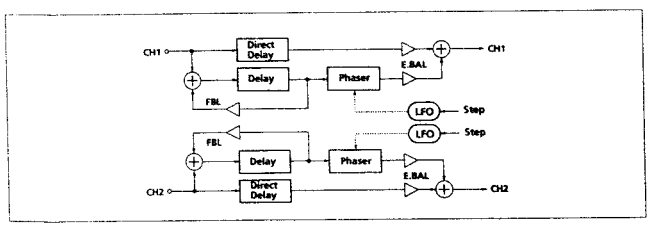
D.PHA (Dual Phaser)

Cet effet est équipé d'un circuit de décalage de phase indépendant pour chaque canal et ajoute un signal à décalage de phase au son direct pour créer un effet d'ondulation.
Le réglage du pas de fréquence modifie l'incrément de variation de la tonalité. (En position OFF, vous pouvez réaliser une variation progressive de la tonalité.)

Effektparameter

D.PHA(Dual Phaser)

Dieser Effekt wird dadurch erzielt, daß für jeden Kanal eine unabhängige Phasenverschiebung verwendet wird. Dem direkten Klang wird ein phasenverschobenes Signal hinzugefügt, so daß ein wellenartiger Klang entsteht.
Mit Step Frequency können Sie die Zeitspanne ändern, nach der der Ton variiert wird. (Ist OFF eingestellt, erzielen Sie eine sanfte Tonvariation.)



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	FREQ1	LFO Frequency CH1 [Hz]	0.01 - 40.0
	D	FREQ2	LFO Frequency CH2 [Hz]	0.01 - 40.0
	E	Phase	LFO Phase Difference	0 - 180
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	DPTH1	Depth CH1 [%]	0 - 100
	B	DPTH2	Depth CH2 [%]	0 - 100
	C	MANU1	Manual CH1 [%]	0 - 100
	D	MANU2	Manual CH2 [%]	0 - 100
	E	RESO1	Resonance CH1 [%]	-100 - 0 - +100
	F	RESO2	Resonance CH2 [%]	-100 - 0 - +100
3	A	Time 1	Delay Time CH1 [msec]	0 - 340
	B	Time 2	Delay Time CH2 [msec]	0 - 340
	C	DryT1	Direct Delay Time CH1 [msec]	0 - 340
	D	DryT2	Direct Delay Time CH2 [msec]	0 - 340
	E	Step1	Step Frequency CH1 [Hz]	off, 0.01 - 100
	F	Step2	Step Frequency CH2 [Hz]	off, 0.01 - 100
4	A	FBL 1	Feedback Level CH1 [%]	-99 - 0 - +99
	B	FBL 2	Feedback Level CH2 [%]	-99 - 0 - +99
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

VIBRT (Vibrato)

This effector periodically varies the pitch to produce a vibrato effect.

Paramètres d'effet

VIBRT (Vibrato)

Cet effet fait varier périodiquement le ton pour produire un effet de vibrato.

Effektparameter

VIBRT (Vibrato)

Dieser Effekt wird durch periodisches Variieren der Tonhöhe erzielt.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [%]	0 - 100
	D	FREQ	LFO Frequency [Hz]	0.01 - 40.0
	E	Wave	LFO Waveform	SIN, SQR
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

TREML (Tremolo)

This effector periodically varies the sound volume to produce a tremolo effect.

TREML (Tremolo)

Cet effet fait varier périodiquement le volume du son pour produire un effet de tremolo.

TREML (Tremolo)

Dieser Effekt wird durch periodisches Variieren des Klangvolumens erzielt.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [%]	0 - 100
	D	FREQ	LFO Frequency [Hz]	0.01 - 40.0
	E	Wave	LFO Waveform	SIN, TRI, EXP1, EXP2
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

A.PAN (Auto Pan)

This effect periodically varies the sound image position so that the sound seems to move across the room.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [-]	0- 100
	D	FREQ	LFO Frequency [Hz]	0.05 - 20.0
	E	Wave	LFO Waveform	SIN, TRI
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

StENS (Stereo Ensemble)

This effect creates a solid sound which is multiplexed to a greater degree than the chorus effect.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [-]	0 - 100
	D	FREQ	LFO Frequency [Hz]	0.05 - 20.0
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	TIME1	Delay Time CH1 [msec]	0 - 640
	B	TIME2	Delay Time CH2 [msec]	0 - 640
	C			
	D			
	E	CMPR		
	F	COPY		

Paramètres d'effet

A.PAN (Auto Pan)

Cet effet fait varier périodiquement la position de l'image du son de sorte que le son semble faire le tour de la pièce.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [-]	0- 100
	D	FREQ	LFO Frequency [Hz]	0.05 - 20.0
	E	Wave	LFO Waveform	SIN, TRI
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

StENS (Stereo Ensemble)

Cet effet crée un son plein qui est multiplexé à un niveau plus élevé qu'avec l'effet chorus.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [-]	0 - 100
	D	FREQ	LFO Frequency [Hz]	0.05 - 20.0
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	TIME1	Delay Time CH1 [msec]	0 - 640
	B	TIME2	Delay Time CH2 [msec]	0 - 640
	C			
	D			
	E	CMPR		
	F	COPY		

Effektparameter

A.PAN (Auto Pan)

Bei diesem Effekt wird der Eindruck erzielt, der Klang "bewege" sich im Raum.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [-]	0- 100
	D	FREQ	LFO Frequency [Hz]	0.05 - 20.0
	E	Wave	LFO Waveform	SIN, TRI
	F			
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

StENS (Stereo Ensemble)

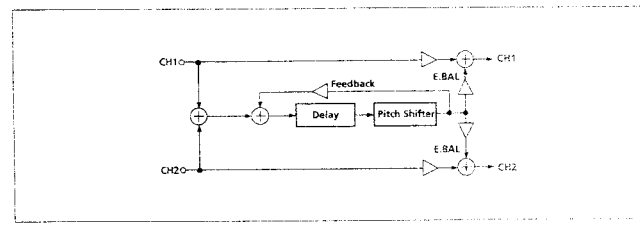
Durch diesen Effekt entsteht ein stabiler Klang, der allerdings stärker vervielfacht (multipleved) wird als der Chorus-Effekt.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Depth	Depth [-]	0- 100
	D	FREQ	LFO Frequency [Hz]	0.05 - 20.0
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	TIME1	Delay Time CH1 [msec]	0 - 640
	B	TIME2	Delay Time CH2 [msec]	0 - 640
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

PITCH (Pitch Shifter)

This effect lets you vary the pitch.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Pitch	Pitch [cent]	-2400 - +2400
	D	Time	Delay Time [msec]	0 - 640
	E	FBL	Feedback Level [%]	-99 - 0 - +99
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Paramètres d'effet

PITCH (Pitch Shifter)

Cet effet vous permet de faire varier le ton.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Pitch	Pitch [cent]	-2400 - +2400
	D	Time	Delay Time [msec]	0 - 640
	E	FBL	Feedback Level [%]	-99 - 0 - +99
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effektparameter

PITCH (Pitch Shifter)

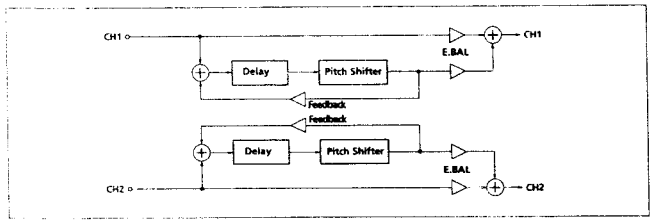
Bei diesem Effekt wird die Tonhöhe verändert.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Pitch	Pitch [cent]	-2400 - +2400
	D	Time	Delay Time [msec]	0 - 640
	E	FBL	Feedback Level [%]	-99 - 0 - +99
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect

D.PCH (Dual Pitch Shifter)

This effect lets you vary the pitch independently for each channel.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	PITCH1	Pitch CH1 [cent]	-2400 - +2400
	D	PITCH2	Pitch CH2 [cent]	-2400 - +2400
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Time1	Delay Time CH1 [msec]	0 - 640
	B	Time2	Delay Time CH2 [msec]	0 - 640
	C	FBL1	Feedback Level CH1 [%]	-99 - 0 - +99
	D	FBL2	Feedback Level CH2 [%]	-99 - 0 - +99
	E	CMPR		
	F	COPY		

Paramètres

D.PCH (Dual Picth Shifter)

Cet effet vous permet de faire varier le ton independamment pour chaque canal.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	PITCH1	Pitch CH1 [cent]	-2400 - +2400
	D	PITCH2	Pitch CH2 [cent]	-2400 - +2400
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Time1	Delay Time CH1 [msec]	0 - 640
	B	Time2	Delay Time CH2 [msec]	0 - 640
	C	FBL1	Feedback Level CH1 [%]	-99 - 0 - +99
	D	FBL2	Feedback Level CH2 [%]	-99 - 0 - +99
	E	CMPR		
	F	COPY		

[illegible]

D.PCH (Dual Pitch Shifter)

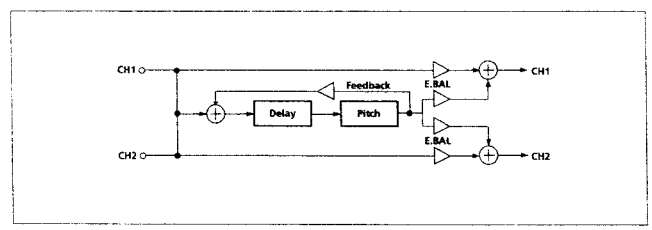
Bei diesem Effekt können Sie c[illegible] Tor höhe für jeden Kanal einzeln variier[illegible].

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	PITCH1	Pitch CH1 [cent]	-2400 - +2400
	D	PITCH2	Pitch CH2 [cent]	-2400 - +2400
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Time1	Delay Time CH1 [msec]	0 - 640
	B	Time2	Delay Time CH2 [msec]	0 - 640
	C	FBL1	Feedback Level CH1 [%]	-99 - 0 - +99
	D	FBL2	Feedback Level CH2 [%]	-99 - 0 - +99
	E	CMPR		
	F	COPY		

Effect

I.PCH (Intelligent Pitch shifter)

This is a pitch shifter which adds harmony in a specified scale according to the input signal.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Pitch	Pitch	5 oct - 2oct
	D	Fine	Pitch Fine [cent]	-100 - +100
	E	Key	Base Key	C, bD - B
	F	Scale	Scale Type	Major, Minor, ~ , User
2	A	Time	Delay Time [msec]	0 – 1200
	B	FBL	Feedback Level [%]	-99 - +99
	C	SOURC	Control Source	off, MIDI, SIGNL
	D	Sense	Control Sense	0 - 10
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
3	A	Tonic	Note Interval (Tonic)	5 oct - 2oct
	B	b 2nd	Note Interval (b 2nd)	5 oct - 2oct
	C	2nd	Note Interval (2nd)	5 oct - 2oct
	D	b 3rd	Note Interval (b 3rd)	5 oct - 2oct
	E	3rd	Note Interval (3rd)	5 oct - 2oct
	F	4th	Note Interval (4th)	5 oct - 2oct
4	A	b 5th	Note Interval (b 5th)	5 oct - 2oct
	B	5th	Note Interval (5th)	5 oct - 2oct
	C	b 6th	Note Interval (b 6th)	5 oct - 2oct
	D	6th	Note Interval (6th)	5 oct - 2oct
	E	b 7th	Note Interval (b 7th)	5 oct - 2oct
	F	7th	Note Interval (7th)	5 oct - 2oct
5	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effekt

I.PCH (Intelligent Pitch Shifter)

Dieses Tonhöhenverschiebung werden nach Eingangssignal in verschiedenen Abstufungen Harmonien hinzugefügt.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	On/Off	On/Off	OFF, ON
	B	TYPE	Effect Type	
	C	Pitch	Pitch	5 oct - 2oct
	D	Fine	Pitch Fine [cent]	-100 - +100
	E	Key	Base Key	C, bD - B
	F	Scale	Scale Type	Major, Minor, ~ , User
2	A	Time	Delay Time [msec]	0 – 1200
	B	FBL	Feedback Level [%]	-99 - +99
	C	SOURC	Control Source	off, MIDI, SIGNL
	D	Sense	Control Sense	0 - 10
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
3	A	Tonic	Note Interval (Tonic)	5 oct - 2oct
	B	b 2nd	Note Interval (b 2nd)	5 oct - 2oct
	C	2nd	Note Interval (2nd)	5 oct - 2oct
	D	b 3rd	Note Interval (b 3rd)	5 oct - 2oct
	E	3rd	Note Interval (3rd)	5 oct - 2oct
	F	4th	Note Interval (4th)	5 oct - 2oct
4	A	b 5th	Note Interval (b 5th)	5 oct - 2oct
	B	5th	Note Interval (5th)	5 oct - 2oct
	C	b 6th	Note Interval (b 6th)	5 oct - 2oct
	D	6th	Note Interval (6th)	5 oct - 2oct
	E	b 7th	Note Interval (b 7th)	5 oct - 2oct
	F	7th	Note Interval (7th)	5 oct - 2oct
5	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

REVRS (Reverse Shift)

This creates an effect which sounds like the reverse of the input signal

Paramètres d'effet

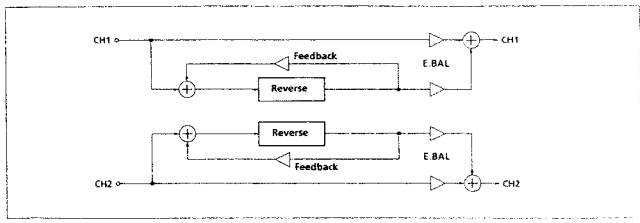
REVRS (Reverse Shift)

Ceci crée un effet qui sonne comme l'inverse du signal d'entrée.

Effektparameter

REVRS (Reverse Shift)

Durch REVRS wird ein Effekt erzielt, der wie die Umkehrung des Eingangssignals klingt.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Pitch	Pitch [cent]	–1200 - +1200
	D	LNGTH	Reverse Length [msec]	20 - 650
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	FBL 1	Feedback Level CH1 [%]	-99 - +99
	B	FBL 2	Feedback Level CH2 [%]	-99 - +99
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

StDLY (Stereo Delay) – MOD 2, REV Block

This is a two-channel stereo delay effect.

Paramètres d'effet

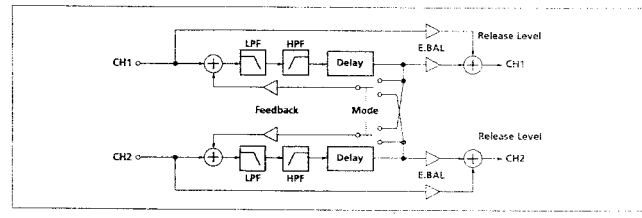
StDLY (Stereo Delay) – MOD 2, REV Block

Il s'agit d'un effet de temporisation stéréo à deux canaux.

Effektparameter

StDLY (Stereo Delay) – Block MOD2, REV

Hierbei handelt es sich um einen Zweikanal-Stereo-Delay-Effekt.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Time 1	Delay Time CH1 [msec]	0 - 340 (MOD2 Block), 0 - 682 (REV Block)
	D	Time 2	Delay Time CH2 [msec]	0 - 340 (MOD2 Block), 0 - 682 (REV Block)
	E	Mode	Feedback Mode	NORML, CROSS
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	FBL 1	Feedback Level CH1 [%]	-99 - +99
	B	FBL 2	Feedback Level CH2 [%]	-99 - +99
	C	LPF 1	LPF Frequency CH1 [kHz]	0.40 - 20.0
	D	LPF 2	LPF Frequency CH2 [kHz]	0.40 - 20.0
	E	HPF 1	HPF Frequency CH1 [kHz]	0.031 - 6.3
	F	HPF 2	HPF Frequency CH2 [kHz]	0.031 - 6.3
3	A	REL	Release Level [%]	0 - 100
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

TmDLY (Tempo Delay) – MOD 2 Block

This is a delay effector which lets you apply a tempo or MIDI time lock to the delay time.

Paramètres d'effet

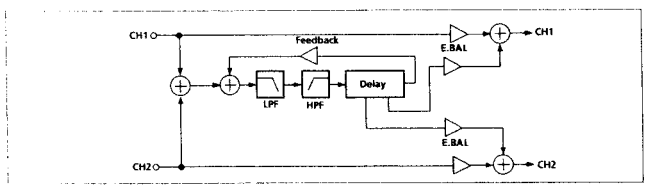
TmDLY (Tempo Delay) – MOD 2 Block

Il s'agit d'un effet de temporisation qui vous permet d'appliquer un tempo ou un verrouillage de temps MIDI à la temporisation

Effektparameter

TmDLY (Tempo Delay) – Block MOD2

Bei diesem Verzögerungseffekt können Sie auf die Verzögerungszeit eine Tempo- bzw. MIDI-Sperre (MIDI Time Lock) anwenden.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Tempo	Tempo [beat/min]	MIDI, 90 – 250
	D	Note	Note	4, 8D, 8, 8/3, 16, 16/3, 32
	E	FBL	Feedback Level [%]	-99 - +99
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Fine1	Time Fine CH1 [msec]	-15 - +15
	B	Fine2	Time Fine CH2 [msec]	-15 - +15
	C	LPF	LPF Frequency [kHz]	0.40 - 20.0
	D	HPF	HPF Frequency [kHz]	0.031 - 6.3
	E	REL	Release Level [%]	0 - 100
	F			
3	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

TmDLY (Tempo Delay) – REV Block

This is a delay effect which lets you apply a tempo or MIDI time lock to the delay time.

Paramètres d'effet

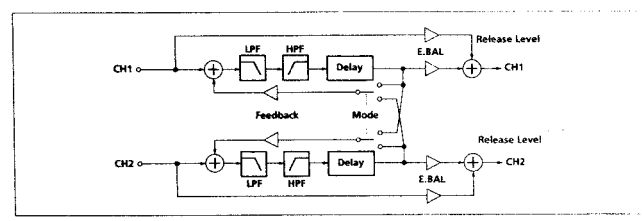
TmDLY (Tempo Delay) – REV Block

Il s'agit d'un effet de temporisation qui vous permet d'appliquer un tempo ou un verrouillage de temps MIDI à la temporisation.

Effektparameter

TmDLY (Tempo Delay) – Block REV

Bei diesem Verzögerungseffekt können Sie auf die Verzögerungszeit eine Tempo- bzw. MIDI-Sperre (MIDI Time Lock) anwenden.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	TMPO1	Tempo CH1 [beat/min]	MIDI, 90 - 250
	D	TMPO2	Tempo CH2 [beat/min]	MIDI, 90 - 250
	E	Note	Note	4, 8D, 8, 8/3, 16, 16/3, 32
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Fine1	Time Fine CH1 [msec]	-15 - +15
	B	Fine2	Time Fine CH2 [msec]	-15 - +15
	C	FBL1	Feedback Level CH1 [%]	-99 - +99
	D	FBL2	Feedback Level CH2 [%]	-99 - +99
	E	Mode	Feedback Mode	NORMAL, CROSS
	F	REL	Release Level [%]	0 - 100
3	A	LPF1	LPF Frequency CH1 [kHz]	0.40 - 20.0
	B	LPF2	LPF Frequency CH2 [kHz]	0.40 - 20.0
	C	HPF1	HPF Frequency CH1 [kHz]	0.031 - 6.3
	D	HPF2	HPF Frequency CH2 [kHz]	0.031 - 6.3
	E	CMPR		
	F	COPY		

Effect Parameters / Paramètres d'effet / Effektparameter

MdDLY (Modulation Delay) MOD 1 Block

This effect lets you modulate the delay sound independently for each channel.

MdDLY (Modulation Delay) MOD 1 Block

Cet effet vous permet de moduler la temporisation du son pour chaque canal.

MdDLY (Modulation Delay) MOD 1 Block

Bei diesem Effekt können Sie den Verzögerungsklang für jeden Kanal einzeln modulieren.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Time	Delay Time [msec]	0 - 500
	D	Depth	Depth [%]	0 - 100
	E	FREQ	LFO Frequency [Hz]	0.01 - 40.0
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	FBL	Feedback Level [%]	-99 - +99
	B	Wave	LFO Waveform	SIN, TRI, EXP1, EXP2
	C			
	D			
	E	CMPR	Compare	
	F	COPY	Copy	

TpDLY (Tapped Delay) MOD 1, REV Block

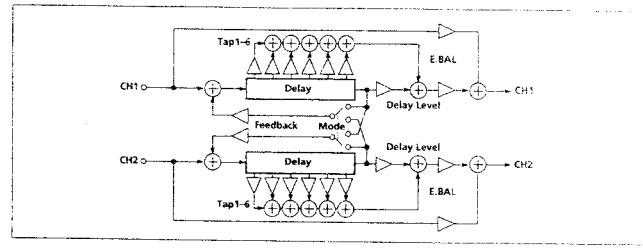
This effector lets you set up to six delays for each channel in addition to the main delay.

TpDLY (Tapped Delay) MOD 1, REV Block

Ce dispositif vous permet de régler jusqu'à six temporisations pour chaque canal en plus de la temporisation principale.

TpDLY (Tapped Delay) MOD 1, REV Block

Bei Angabe von TpDLY können Sie zusätzlich zur Hauptverzögerung für jeden Kanal sechs weitere Verzögerungen einstellen.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Time 1	Delay Time CH1 [msec]	0 - 680
	D	Time 2	Delay Time CH2 [msec]	0 - 680
	E	Mode	Feedback Mode	NORMAL, CROSS
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Tp1-1	Tap 1 time CH1 [msec]	0 - 680
	B	Tp1-2	Tap 1 time CH2 [msec]	0 - 680
	C	Tp2-1	Tap 2 time CH1 [msec]	0 - 680
	D	Tp2-2	Tap 2 time CH2 [msec]	0 - 680
	E	Tp3-1	Tap 3 time CH1 [msec]	0 - 680
	F	Tp3-2	Tap 3 time CH2 [msec]	0 - 680
3	A	Tp4-1	Tap 4 time CH1 [msec]	0 - 680
	B	Tp4-2	Tap 4 time CH2 [msec]	0 - 680
	C	Tp5-1	Tap 5 time CH1 [msec]	0 - 680
	D	Tp5-2	Tap 5 time CH2 [msec]	0 - 680
	E	Tp6-1	Tap 6 time CH1 [msec]	0 - 680
	F	Tp6-2	Tap 6 time CH2 [msec]	0 - 680
4	A	Tp1 LV	Tap1 Level [%]	-100 - +100
	B	Tp2 LV	Tap2 Level [%]	-100 - +100
	C	Tp3 LV	Tap3 Level [%]	-100 - +100
	D	Tp4 LV	Tap4 Level [%]	-100 - +100
	E	Tp5 LV	Tap5 Level [%]	-100 - +100
	F	Tp6 LV	Tap6 Level [%]	-100 - +100
5	A	FBL 1	Feedback Level CH1 [%]	-99 - +99
	B	FBL 2	Feedback Level CH2 [%]	-99 - +99
	C	Dly1 1	Delay Level CH1 [msec]	-100 - +100
	D	Dly1 2	Delay Level CH2 [msec]	-100 - +100
	E	CMPR		
	F	COPY		

TpDLY (Tapped Delay) - MOD 2 Block

This effector lets you set up to three delays for each channel in addition to the main delay. Regarding the parameters, refer to Tp1 - 3 of "TpDLY" of the MOD1 or REV block (page 90).
Also, the Delay Time and Tap Time can be set within a range of 0–340 msec.

TpDLY (Tapped Delay) - MOD 2 Block

Cet effet vous permet de régler jusqu'à trois temporisations pour chaque canal en plus de la temporisation principale. Pour ces parametres, voyez las pages 1 à 3 sur le "TpDLY" du blox MOD1 ou REV bloc (page 90).
De même, le temps de réponse et le temps de prise peuvent être réglés dans une plage de 0 - 340 ms.

TpDLY (Tapped Delay) - MOD 2 Block

Bei Angabe von TpDLY können Sie zusätzlich zur Hauptverzögerung für jeden Kanal drei Verzögerungen angeben. Einzelheiten zu den Parametern finden Sie im Rahmen der Erläuterungen zu Block MOD1 oder REV (Seite 90) auf den Seiten 1 bis 3 des Abschnitts über "TpDLY".
Für die Parameter Delay Time und Tap Time können Sie Werte zwischen 0 und 340 msek. einstellen.

DbDLY (Double Delay) - MOD 1, REV Block

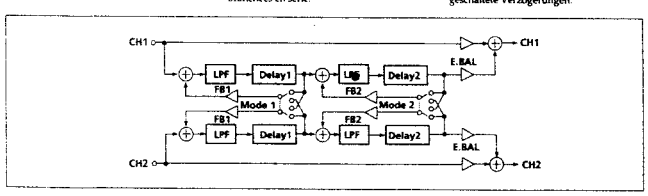
This effector contains two delays connected in series.

DbDLY (Double Delay) - MOD 1, REV Block

Cet effet reprend deux temporisations branchées en serie.

DbDLY (Double Delay) - MOD 1, REV Block

Dieser Effekt umfaßt zwei in Serie geschaltete Verzögerungen.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Mode1	Feedback1 Mode	NORMAL, CROSS
	D	Mode2	Feedback2 Mode	NORMAL, CROSS
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	TM1 1	Delay1 Time CH1 [msec]	0 - 340
	B	TM1 2	Delay1 Time CH2 [msec]	0 - 340
	C	FB1 1	Feedback1 Level CH1 [%]	-99 - +99
	D	FB1 2	Feedback1 Level CH2 [%]	-99 - +99
	E	LP1 1	LPF Frequency1 CH1 [kHz]	0.4 - 20.0
	F	LP1 2	LPF Frequency1 CH2 [kHz]	0.4 - 20.0
3	A	TM2 1	Delay2 Time CH1 [msec]	0 - 340
	B	TM2 2	Delay2 Time CH2 [msec]	0 - 340
	C	FB2 1	Feedback2 Level CH1 [%]	-99 - +99
	D	FB2 2	Feedback2 Level CH2 [%]	-99 - +99
	E	LP2 1	LPF Frequency2 CH1 [kHz]	0.4 - 20.0
	F	LP2 2	LPF Frequency2 CH2 [kHz]	0.4 - 20.0
4	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

HdDLY (Hold Delay) - MOD 1 Block

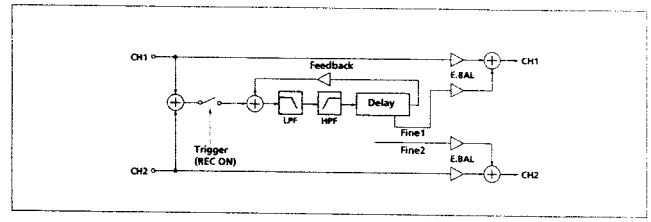
This effector records (applies) the effect only while the trigger is on, and automatically continues normal playback when the trigger is released.

HdDLY (Hold Delay) - MOD 1 Block

Ce dispositif enregistre (applique) l'effet uniquement lorsque le declencheur est appliqué, et continue automatiquement a jouer normalement lorsque le déclencheur est relâché.

HdDLY (Hold Delay) - MOD 1 Block

Bei Angabe von HdDLY wird der Effekt nur aufgenommen, d. h. angewendet, wenn der Schalter auf "Ein" steht. Sobald Sie umschalten, wird automatisch die normale Wiedergabe fortgesetzt.

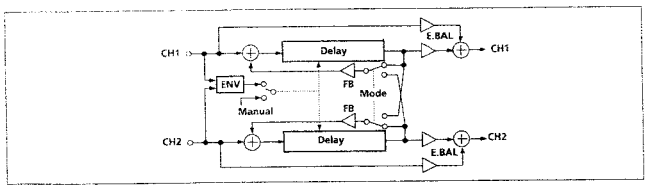


PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	REC	REC Trigger	OFF, ON
	D	FBL	Feedback Level [%]	-100 - +100
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Fine1	Time Fine CH1 [msec]	-50 - 0
	B	Fine2	Time Fine CH2 [msec]	-50 - 0
	C	LPF	LPF Frequency [kHz]	0.40 - 20.0
	D	HPF	HPF Frequency [kHz]	0.031 - 6.3
	E	CMPR		
	F	COPY		

Effect Parameters

SwDLY (Sweep Delay) - MOD 1 Block

This is an effector which lets you control the delay time either manually or with the input signal envelope.
The effect produced is a sound which has a pitch that varies with the magnitude of the input signal. Adjust the attack time and release time according to the input source.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Time 1	Delay Time CH1 [msec]	0 - 500
	D	Time 2	Delay Time CH2 [msec]	0 - 500
	E	Mode	Feedback Mode	NORMAL, CROSS
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	FBL 1	Feedback Level CH1 [%]	-99 - +99
	B	FBL 2	Feedback Level CH2 [%]	-99 - +99
	C	SENS	ENV Sensitivity [%]	0 - 100
	D	MANUL	Manual Control [%]	0 - 100
	E	SOURC	Control Source	CH1, CH2, IN, MANUL
	F	POLA	Control Polarity	NORML, INV
3	A	ATK	Attack Time [msec]	0.1 - 1000
	B	REL	Release Time [sec]	0.1 - 1000
	C			
	D			
	E	CMPR		
	F	COPY		

93

Paramètres d'effet

SwDLY (Sweep Delay) - MOD 1 Block

Il s'agit d'un effet qui vous permet de contrôler le temps de temporisation soit manuellement ou avec l'enveloppe du signal d entrée.
L'effet produit est un son dont la tonalité varie en fonction de l'amplitude du signal d'entrée. Réglez le temps de réponse et le temps de déplacement en fonction de la source d'entrée.

Effektparameter

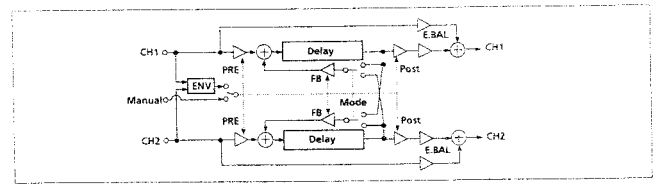
SwDLY (Sweep Delay) - MOD 1 Block

Bei diesem Effekt können Sie die Verzögerungszeit entweder manuell oder über die Modulation des Eingangssignals steuern.
Beim erzeugten Effekt bzw. Klang ändert sich die Tonhöhe ("Pitch") je nach Stärke des Eingangssignals. Die Ansprechzeit (Attack Time) und die Abfallzeit (Release Time) stellen Sie gemäß der Eingangsquelle ein.

Effect Parameters

DcDLY (Ducking Delay) - MOD 2, REV Block

This is an effector which lets you control the effect level according to the input signal level.
For example, if the input signal level exceeds the signal threshold:
1 The control target sound level increases when Polarity = Normal.
2 The control target sound level decreases when Polarity = Inverse.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Time 1	Delay Time CH1 [msec]	0 - 340 (MOD2 Block) / 0 - 682 (REV Block)
	D	Time 2	Delay Time CH2 [msec]	0 - 341 (MOD2 Block) / 0 - 682 (REV Block)
	E	Mode	Feedback Mode	NORMAL, CROSS
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	FBL 1	Feedback Level CH1 [%]	-99 - +99
	B	FBL 2	Feedback Level CH2 [%]	-99 - +99
	C	LPF 1	LPF Frequency CH1 [kHz]	0.40 - 20.0
	D	LPF 2	LPF Frequency CH2 [kHz]	0.40 - 20.0
	E			
	F			
3	A	THRS	Threshold [%]	0 - 100
	B	ATK	Attack Time [msec]	10 - 5000
	C	REL	Release Time [msec]	10 - 5000
	D	POLA	Control Polarity	NORML, INV
	E	TAGET	Control Target	OFF, PRE, POST, FB
	F	SOURC	Control Source	CH1, CH2, IN, MANU
4	A	MANUL	Manual Control [%]	0 - 100
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

94

Paramètres d'effet

DcDLY (Ducking Delay) - MOD 2, REV Block

Il s'agit d'un effet qui vous permet de contrôler le niveau d'effet en fonction du niveau d'entrée du signal.
Par exemple, si le niveau du signal d'entrée dépasse le seuil de signal :
1 Le volume du son cible de contrôle augmente si la polarité est normale.
2 Le volume du son cible de contrôle diminue si la polarité est inverse.

Effektparameter

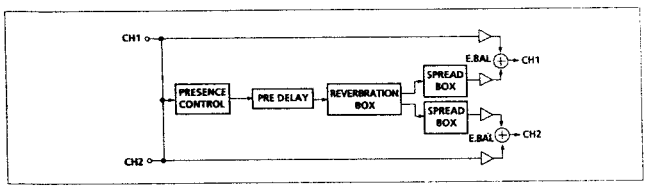
DcDLY (Ducking Delay) - MOD 2, REV Block

Bei diesem Effekt können Sie den Effektpegel auf der Grundlage des Eingangssignalpegels steuern.
Zum Beispiel, wenn der Eingangssignalpegel den Signalschwellenwert überschreitet:
1 Das Control-Zielton-Klangvolumen steigt bei Polarität = Normal.
2 Das Control-Target-Klangvolumen sinkt bei Polarität = Inverse.

Effect Parameters

HALL (Hall Reverb)

This effect is ideal for creating reverberations similar to those created in a relatively expansive space, such as a concert hall.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	RevTM	Reverb Time [sec]	0.3 - 50.0
	D	PreD	Predelay Time [msec]	0 - 150
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Size	Size	0.5 - 1.5
	B	SPRED	Spread	0.5 - 1.5
	C	PRSNC	Presence Control	0.1 - 1.0
	D	Rot HI	Rotate High	0.1 - 1.0
	E	CMPR		
	F	COPY		

ROOM (Room Reverb)

This effect is ideal for creating reverberations similar to those created in a relatively small space, such as a room or studio.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	RevTM	Reverb Time [sec]	0.12 - 20.0
	D	PreD	Predelay Time [msec]	0 - 150
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	SIZE	Size	0.5 - 1.5
	B	SPRED	Spread	0.5 - 2.5
	C	PRSNC	Presence Control	0.1 - 1.0
	D	Rot HI	Rotate High	0.1 - 1.0
	E	CMPR		
	F	COPY		

95

Paramètres d'effet

HALL (Hall Reverb)

Cet effet est idéal pour créer des réverbérations semblables à celles créées dans un local relativement grand, comme une salle de concert.

ROOM (Room Reverb)

Cet effet est idéal pour créer des réverbérations semblables à celles créées dans un local relativement petit, comme une pièce ou un studio.

Effektparameter

HALL (Hall Reverb)

Wenn Sie HALL einstellen, erzeugt das Gerät einen Halleffekt, wie er in großen Räumen, z. B. in Konzertsälen, erzielt wird.

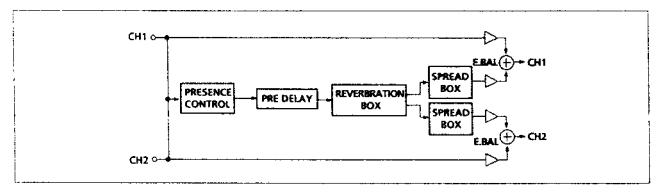
ROOM (Room Reverb)

Wenn Sie ROOM einstellen, erzeugt das Gerät einen Halleffekt, wie er in kleinen Räumen, z. B. im Studio, erzielt wird.

Effect Parameters

PLATE (Plate Reverb)

This effect provides a reverb effect with a high reverberation density.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	RevTM	Reverb Time [sec]	0.3 - 50
	D	Pre D	Predelay Time [msec]	0 - 150
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	SIZE	Size	0.5 - 1.5
	B	SPRED	Spread	0.5 - 1.5
	C	PRSNC	Presence Control	0.1 - 1.0
	D	Rot HI		0.1 - 1.0
	E	CMPR		
	F	COPY		

96

Paramètres d'effet

PLATE (Plate Reverb)

Cet effet assure un effet de réverbération avec une densité de réverbération.

Effektparameter

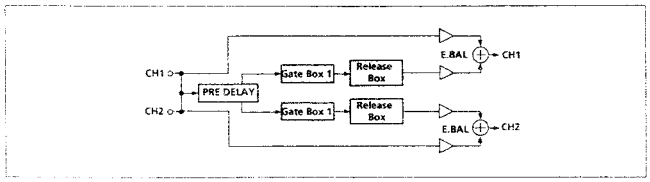
PLATE (Plate Reverb)

Hierbei handelt es sich um einen Halleffekt mit hoher Dichte.

Effect Parameters

GtREV (Gated Reverb)

This is a gated reverb effect with which envelope curve can be set precisely.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Gat T	Gate Time [msec]	0 - 280
	D	PreD	Predelay Time [msec]	0 - 150
	E	PRSNC	Presence Control	0.1 - 1.0
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	SIZE	Gate Size	0.5 - 2.0
	B	SPRED	Spread	0.5 - 2.5
	C	FORM	Envelope Form	LIN1, 2, EXP1, 2
	D	Direct	Envelope Direction	NORM, REV
	E	Env T	Envelope Time [sec]	0.01 - 99.99
	F	REL	Release Form	5 - 100
3	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Paramètres d'effet

GTREB (Gated Reverb)

Il s'agit d'une réverbération à gâchette contrôlée dont la courbe d'enveloppe peut être réglée avec précision.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Gat T	Gate Time [msec]	0 - 280
	D	PreD	Predelay Time [msec]	0 - 150
	E	PRSNC	Presence Control	0.1 - 1.0
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	SIZE	Gate Size	0.5 - 2.0
	B	SPRED	Spread	0.5 - 2.5
	C	FORM	Envelope Form	LIN1, 2, EXP1, 2
	D	Direct	Envelope Direction	NORM, REV
	E	Env T	Envelope Time [sec]	0.01 - 99.99
	F	REL	Release Form	5 - 100
3	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effektparameter

GtREV (Gated Reverb)

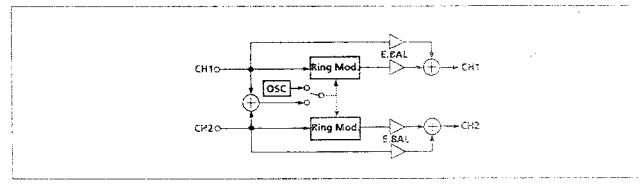
Hierbei handelt es sich um einen torgesteuerten Halleffekt, dessen Modulation exakt eingestellt werden kann.

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Gat T	Gate Time [msec]	0 - 280
	D	PreD	Predelay Time [msec]	0 - 150
	E	PRSNC	Presence Control	0.1 - 1.0
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	SIZE	Gate Size	0.5 - 2.0
	B	SPRED	Spread	0.5 - 2.5
	C	FORM	Envelope Form	LIN1, 2, EXP1, 2
	D	Direct	Envelope Direction	NORM, REV
	E	Env T	Envelope Time [sec]	0.01 - 99.99
	F	REL	Release Form	5 - 100
3	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

Effect Parameters

RING (Ring Modulater)

This effector multiplies two signals to create a ring or chime sound.



PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	OSC	OSC Frequency [Hz]	0.05 - 3000
	D	SOURC	Modulation Source	SIG, OSC
	E			
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A			
	B			
	C			
	D			
	E	CMPR		
	F	COPY		

ROTRY (Rotary Speaker)

This effector simulates the sound of a rotary speaker.
To change the speed using an external control device, set the Speed Select parameter in the RTC (Real Time Control) section (see page 44).

PAGE	FUNCTION button	PARAMETER name		Variable range
1	A	OnOff	OnOff	OFF, ON
	B	TYPE	Effect Type	
	C	Speed	Speed Select	Slow, Fast
	D	Drive	Drive [%]	0 - 100
	E	Depth	Depth [%]	0 - 100
	F	E.BAL	Effect Balance	DRY, 99:1 - 1:99, EFF
2	A	Ratio	Speed Ratio	−20 - +20
	B	SpBAL	Speaker Balance	HRN, 99:1 - 1:99, ROT
	C			
	D			
	E	CMPR		
	F	COPY		

Paramètres d'effet

RING (Ring Modulator)

Cet effet multiplie deux signaux pour créer une sonnerie.

ROTRY (Rotary Speaker)

Cet effet simule le son d'un haut-parleur rotatif.
Pour faire varier la vitesse à l'aide d'un dispositif de commande externe, réglez le paramètre de sélection de la vitesse dans la section RTC (Real Time Control) (voir page 45).

Effektparameter

RING (Ring Modulator)

Bei diesem Effekt werden zwei Signale multipliziert, so daß ein glockenähnlicher Klang erzeugt wird.

ROTRY (Rotary Speaker)

Dieser Effekt simuliert den Klang eines sich drehenden Lautsprechers.
Wenn Sie die Geschwindigkeit mit einem externen Steuergerät ändern möchten, stellen Sie den Parameter Speed Select im Abschnitt RTC (Real Time Control) wie gewünscht ein (siehe Seite 45).

Effect Parameters

General Terminology

Memory
Memory is an internal circuit for holding electronic data. Once parameter data is stored in memory as a program, you can recall the memorized setting values at any time in the future.
This unit is equipped with 100 preset program locations (memorized program locations which contain effect parameter data loaded at the factory and cannot be changed) and 100 user program locations (memorized program locations where the user can store original effects).

MIDI
MIDI is an abbreviation for Musical Instrument Digital Interface, an international standard for transmitting data between electronic musical instruments and related devices.

Edit
Changing parameter values is called "editing." A process used to create new effects by modifying the parameters of existing preset and user program effects.

Save
New effects created by editing can be "saved" (stored) in this unit's user program. Even after an effect has been saved, it can be edited again and resaved.

Parameter
Musical effects are made up of various elements. For example, to create a delay effect, the basic element that provides the effect is delay time. Effects are obtained only after values are determined for these necessary elements, each of which is called a parameter. In this manual, parameters are also sometimes called effect parameters, to indicate that they are parameters used for determining an effect.

Paramètres d'effet

Terminologie generale

Mémoire
La mémoire est un circuit interne qui conserve les données électroniques. Quand les données d'un paramètre sont stockées en mémoire, en tant que programme, vous pouvez rappeler les valeurs mémorisées à tout moment.
Cet appareil est équipé de 100 emplacements mémoire prédéfinis (emplacements de programme mémorisé qui contiennent les données des paramètres d'effet chargés en usine et qui ne peuvent pas être modifiés) et 100 emplacements de programme utilisateur (emplacements de programme mémorisé où l'utilisateur peut stocker les effets originaux).

MIDI
MIDI est l'abréviation de Musical Instrument Digital Interface, une norme internationale pour la transmission de données entre les instruments de musique électroniques et les appareils connexes.

Edition
La modification des valeurs de paramètre est appelée "édition", un processus utilisé pour créer de nouveaux effets en modifiant les paramètres des effets existants prédéfinis et des effets de programmes utilisateurs.

Sauvegarde
Les nouveaux effets créés par l'édition peuvent être "sauvegardés" (stockés) dans le programme utilisateur de l'appareil. Même après avoir été sauvegardé, un effet peut être à nouveau édité et à nouveau sauvegardé.

Paramètre
Les effets musicaux sont composés de divers éléments. Par exemple, pour créer un effet de temporisation, l'élément de base qui assure l'effet et le temps de temporisation. Les effets ne sont obtenus qu'après avoir déterminé les valeurs des éléments nécessaires, qu'on appelle aussi paramètres. Dans ce manuel, les paramètres sont aussi parfois appelés paramètres d'effet, pour indiquer qu'il s'agit des paramètres utilisés pour déterminer un effet.

Effektparameter

Terminologie generale

Mémoire
La mémoire est un circuit interne qui conserve les données électroniques. Quand les données d'un paramètre sont stockées en mémoire, en tant que programme, vous pouvez rappeler les valeurs mémorisées à tout moment.
Cet appareil est équipé de 100 emplacements mémoire prédéfinis (emplacements de programme mémorisé qui contiennent les données des paramètres d'effet chargés en usine et qui ne peuvent pas être modifiés) et 100 emplacements de programme utilisateur (emplacements de programme mémorisé où l'utilisateur peut stocker les effets originaux).

MIDI
MIDI est l'abréviation de Musical Instrument Digital Interface, une norme internationale pour la transmission de données entre les instruments de musique électroniques et les appareils connexes.

Edition
La modification des valeurs de paramètre est appelée "édition", un processus utilisé pour créer de nouveaux effets en modifiant les paramètres des effets existants prédéfinis et des effets de programmes utilisateurs.

Sauvegarde
Les nouveaux effets créés par l'édition peuvent être "sauvegardés" (stockés) dans le programme utilisateur de l'appareil. Même après avoir été sauvegardé, un effet peut être à nouveau édité et à nouveau sauvegardé.

Paramètre
Les effets musicaux sont composés de divers éléments. Par exemple, pour créer un effet de temporisation, l'élément de base qui assure l'effet et le temps de temporisation. Les effets ne sont obtenus qu'après avoir déterminé les valeurs des éléments nécessaires, qu'on appelle aussi paramètres. Dans ce manuel, les paramètres sont aussi parfois appelés paramètres d'effet, pour indiquer qu'il s'agit des paramètres utilisés pour déterminer un effet.

Teminology and Parameter Descriptions

Compressor COMP, LIMIT, S.ATK

Sensitivity
Sets the sensitivity of the signal input. When a large sensitivity value is set, the effect will be applied even to small-volume signals.

Attack Time
Sets how long it takes for the compressor or limiter to kick in after a signal is input.

Threshold Level
When using the limiter, the effect will be applied when the input signal exceeds this level. When set to 0dB, the limiter effect will not be applied because 0dB is the maximum input level.

Ratio
When using the limiter, this parameter sets how much compression is desired when the signal exceeds the threshold level.

Release Time
When using the limiter, this parameter sets how long it will take for the effect to fade out after the input signal falls below the threshold level.

Level
Sets the output signal level.

Distortion, CRNCH, OVD 1 - 4, DIST 1 - 2

Gain
Sets the depth of the overdrive or distortion effect.

Tone
This is a high-range tone control. Setting a larger value produces a brighter sound.

Dynamic NR
Sets the dynamic noise reduction effect. Setting a larger value suppresses a larger noise level.

Direct Blend
Sets the mixing rate of the distorted sound with non-distorted, direct sound. When using as a normal distortion or overdrive effect, set this parameter to 0.

Level
Sets the output level.

Terminologie et description des paramètres

Compressor COMP, LIMIT, S.ATK

Sensitivity
Règle la sensibilité du signal d'entrée. Quand la valeur de sensibilité réglée est grande, l'effet sera appliqué même aux signaux de faible volume.

Attack Time
Indique combien de temps le compresseur ou le limitateur attend avant d'attaquer quand un signal est injecté.

Treshold Level
Quand le limitateur est utilisé, l'effet sera appliqué quand le signal d'entrée dépasse ce niveau. Si l'effet de limitation est réglé sur 0 dB, il ne sera pas appliqué car 0 dB est le niveau d'entrée maximum.

Ratio
Quand le limitateur est utilisé, ce paramètre détermine le taux de compression souhaité quand le signal dépasse le niveau de seuil.

Release Time
Quand le limitateur est utilisé, ce paramètre détermine combien de temps l'effet se poursuit avant d'être atténué quand le signal d'entrée redescend sous le niveau de seuil.

Level
Règle le niveau du signal d'entrée.

Distortion, CRNCH, OVD 1 - 4, DIST 1 - 2

Gain
Règle la profondeur de l'effet de surmodulation ou de déformation.

Tone
Il s'agit d'un réglage des tonalités aiguës. Une valeur plus élevée donne un son plus clair.

Dynamic NR
Règle d'effet de réduction dynamique du bruit. Une valeur plus élevée supprime un niveau de bruit plus élevé.

Direct Blend
Règle le taux de mélange du son déformé avec le son direct, non déformé.
Lorsque vous utilisez une distorsion normale ou un effet de surmodulation, réglez ce paramètre sur 0.

Level
Règle le niveau de sortie.

Terminologie und Parameter-Description (Beschreibung)

Kompressor (COMP, LIMIT, S.ATK)

Sensitivity
Dieser Parameter legt die Sensitivität, hinsichtlich des Signaleingangs fest. Wenn Sie einen hohen Sensitivitätswert einstellen, wird der Effekt auch auf sehr leise Signale angewendet.

Attack Time
Durch die Ansprechzeit wird festgelegt, wie lange der Kompressor bzw. Limiter braucht, um auf ein Eingangssignal zu reagieren.

Threshold Level
Wenn Sie mit dem Limiter arbeiten, wird der entsprechende Effekt dann angewendet, wenn das eingegangene Signal über diesem Wert liegt. Wenn Sie 0 dB einstellen, wird der Effekt nicht angewendet, da es sich bei 0 dB um den maximalen Eingangspegel handelt.

Ratio
Beim Arbeiten mit dem Limiter legt dieser Parameter fest, wieviel Kompression gewünscht ist, wenn das Signal den Schwellenwert (Threshold Level) überschreitet.

Release Time
Beim Arbeiten mit dem Limiter legt dieser Parameter fest, wie lange das Ausblenden eines Effekts dauert, wenn das Eingangssignal den eingestellten Schwellenwert wieder unterschreitet.

Level
Dieser Parameter legt den Ausgangssignalpegel fest.

Verzerrung (CRNCH, OVD 1-4, DIST 1-2)

Gain
Dieser Parameter legt die Stärke der Verzerrung bzw. des Overdrive-Effekts fest.

Tone
Mit diesem Parameter können Sie die Klangfarbe definieren. Wenn Sie einen höheren Wert einstellen, wird der Klang heller.

Dynamic NR
Mit diesem Parameter stellen Sie ein, in welchem Umfang Rauschen unterdrückt werden soll. Je höher der eingestellte Wert ist, in desto größerem Maße wird Rauschen unterdrückt.

Direct Blend
Mit diesem Parameter stellen Sie ein, in welchem Umfang der verzerrte Klang mit dem nicht verzerrten, direkten Klang gemischt werden soll. Wenn Sie mit normaler Verzerrung bzw. mit einem normalen Overdrive-Effekt arbeiten, sollten Sie diesen Parameter auf 0 setzen.

Level
Dieser Parameter legt den Ausgangssignalpegel fest.

Teminology and Parameter Descriptions

Equalizer EQ, EXCIT, WAH

MID Frequency
Sets the frequency of the mid-range equalizer effect.
MID Gain
Sets the gain of the mid-range equalizer.
MID Q
Sets the bandwidth of mid-range equalizer band. Setting larger values narrows the band.
LOW Frequency
Sets the frequency of the low-range equalizer effect.
LOW Gain
Sets the gain of the low-range equalizer.
High Frequency
Sets the center frequency of the high-range equalizer effect.
Manual
Sets the central point of the wah operation. When using it as a pedal wah, set this parameter with RTC (real time controller).
Control Source
Sets the control signal that will be affected by the dynamics effect.
High Gain
Sets the gain of the high-range equalizer.
High Q
Sets the bandwidth of high-range equalizer band. Setting larger values narrows the band.
Level
Sets the output sound volume.
Frequency
Sets the center frequency for applying the exciter effect.
Exciter Level
Sets the level of the exciter effect.
Wah Mode
Sets the bandwidth of the wah effect.
Sensitivity
Adjusts how the effect is applied when using the Auto Wah function. When using the effect as a pedal wah, set this parameter value to 0.

Terminologie et description des paramètres

Equalizer EQ, 4PEQ

Mid Frequency
Règle la fréquence de l'effet d'égalisation dans les fréquences moyennes.
MID Gain
Règle le gain de l'égalisation des fréquences moyennes.
MID Q
Règle la largeur de bande de l'égalisation des fréquences moyennes. L'augmentation de la valeur réduit la largeur.
LOW Frequency
Règle la fréquence de l'effet d'égalisation dans les basses fréquences.
LOW Gain
Règle le gain de l'égalisation des basses fréquences.
High Frequency
Règle la fréquence centrale de l'effet d'égalisation des hautes fréquences.
Manual
Règle le point central du fonctionnement wah. Lors de l'utilisation d'une pédale wah, réglez ce paramètre avec RTC (Régulateur en temps réel).
Control Source
Règle le signal de commande qui sera influencé par l'effet de dynamique.
High Gain
Règle le gain de l'égalisation des hautes fréquences.
High Q
Règle la largeur de bande de l'égalisation des hautes fréquences. L'augmentation de la valeur réduit la largeur de bande.
Level
Règle le volume du son de sortie.
Frequency
Règle la fréquence centrale pour appliquer l'effet d'excitation.
Exciter level
Règle le niveau de l'effet d'excitation.
Wah Mode
Règle la largeur de bande de l'effet wah.
Sensitivity
Règle la manière dont l'effet est appliqué avec la fonction wah. Pour utiliser l'effet comme une pédale wah, réglez la valeur de ce paramètre sur 0.

Terminologie und Parameter "Description" (Beschreibung)

Equalizer (EQ, EXCIT, WAH)

MID Frequency
Mit diesem Parameter stellen Sie die genaue Frequenz für einen Equalizer-Effekt im mittleren Frequenzbereich ein.
MID Gain
Dieser Parameter legt die Verstärkung eines Equalizer-Effekts im mittleren Frequenzbereich fest.
MID Q
Mit diesem Parameter stellen Sie die Bandbreite eines Equalizer-Bands im mittleren Frequenzbereich ein.
Je größer der eingestellte Wert ist, desto schmaler wird das Band.
LOW Frequency
Mit diesem Parameter stellen Sie die genaue Frequenz für einen Equalizer-Effekts im unteren Frequenzbereich ein.
LOW Gain
Dieser Parameter legt die Verstärkung eines Equalizer-Effekts im unteren Frequenzbereich fest.
HIGH Frequency
Mit diesem Parameter stellen Sie die genaue Frequenz für einen Equalizer-Effekt im hohen Frequenzbereich ein.
Manual
Mit diesem Parameter stellen Sie den genauen Wert für den Wah-Effekt ein. Wenn Sie mit einem Wah-Wah-Pedal arbeiten, sollten Sie diesen Parameter auf RTC (Real Time Controller, Echtzeit-Controller) einstellen.
Control Source
Mit diesem Parameter stellen Sie das Steuersignal ein, auf das sich der Dynamics-Effekt auswirkt.
HIGH Gain
Dieser Parameter legt die Verstärkung eines Equalizer-Effekts im hohen Frequenzbereich fest.
HIGH Q
Mit diesem Parameter stellen Sie die Bandbreite eines Equalizer-Bands im hohen Frequenzbereich ein.
Je größer der eingestellte Wert ist, desto schmaler wird das Band.
Level
Dieser Parameter legt die Leistung des Ausgabeklangs fest.
Frequency
Mit diesem Parameter stellen Sie die Mittelfrequenz für den Exciter-Effekt ein.
Exciter Level
Dieser Parameter legt die Stärke des Exciter-Effekts fest.
Wah Mode
Dieser Parameter definiert die Bandbreite für den Wah-Effekt.
Sensitivity
Mit diesem Parameter stellen Sie ein, wie der Effekt angewendet wird, wenn Sie mit der Funktion Auto Wah arbeiten. Falls Sie den Effekt mit dem Wah-Wah-Pedal erzeugen wollen, stellen Sie diesen Parameter auf 0.

Teminology and Parameter Descriptions

Amp Simulator AMP

Type
Selects the type of amplifier to simulate.
Type-F: Simulates a twin-speaker integrated tube amplifier.
Type-B: Simulates a single-speaker integrated tube amplifier.
Type-M: Simulates a large stack type amplifier.
Type-J: Simulates a bright twin-speaker integrated amplifier.

MIC Position
Front: Simulates the sound heard directly from in front of the speakers.
Slant: Simulates the sound heard slightly to the left or right of the "Front" position.
Upper: Simulates the sound heard slightly above the "Front" position.
ON: Simulates the sound heard when the microphone is turned on.

Chorus CHORS, StCHO, D.CHO

Depth
Determines the depth of the chorus effect. Setting the depth to 100% modulates the sound over a time width of approximately 40 msec. 0% completely mutes the chorus effect.
LFO Frequency
Sets the chorus modulation speed. The LFO frequency for a normal chorus effect is generally set in the range of 0.05–3Hz.
Delay Time
Sets the chorus delay time. This parameter is normally set within the range of 10–20 msec.
LFO Waveform
Sets the modulation waveform. If SIN (sine wave) is selected, the chorus effect will be modulated with an undulating effect. If TRI (triangle wave) is selected, the modulating effect will be reduced.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and effect sound (EFF).
Direct Delay
Sets the delay time for the direct sound.
LFO Phase
Sets the LFO phase difference between CH1 and CH2.

Terminologie et description des paramètres

Amp Simulator AMP

Type
Sélectionnez le type d'amplificateur à simuler.
Type-F: Simule un ampli à tubes intégré à deux haut-parleurs.
Type-B: Simule un ampli à tubes à un haut-parleur.
Type-M: Simule un gros ampli de type tour.
Type-J: Simule un ampli intégré à deux haut-parleurs clairs.

Position du micro
Front: Simule le son entendu directement à l'avant des haut-parleurs.
Slant: Simule le son entendu légèrement à gauche ou à droite de la position "Front" des haut-parleurs.
Upper: Simule le son entendu légèrement en haut de la position "Front" des haut-parleurs.
ON: Simule le son entendu quand le microphone est branché.

Chorus CHORS, StCHO, D.CHO

Depth
Détermine la profondeur de l'effet de chœur. En réglant la profondeur à 100%, le son est modulé sur une largeur de temps d'environ 40 msec. 0% atténue complètement l'effet de chœur.
LFO Frequency
Règle la vitesse de modulation du chœur. La fréquence LFO pour un effet de chœur normal est généralement réglé dans la plage de 0,05 à 3 Hz.
Delay Time
Règle la temporisation du chœur. Ce paramètre est en principe réglé dans une plage de 10 à 20 ms.
LFO Waveform
Règle la forme d'onde modulée. Si SIN (onde sinusoïdale) est sélectionné, l'effet de chœur sera modulé avec un effet ondulant. Si TRI (onde triangulaire) est sélectionné, l'effet de modulation sera réduit.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).
Direct Delay
Règle le temps de temporisation pour le son direct.
LFO Phase
Règle la différence de phase LFO entre le CH1 et le CH2.

Terminologie und Parameter "Description" (Beschreibung)

Amp Simulator (AMP)

Type
Mit diesem Parameter wählen Sie den Verstärkertyp aus, der simuliert werden soll.
Type-F: Simuliert einen Doppellautsprecher-Röhrenverstärker.
Type-B: Simuliert einen einzelnen Lautsprecher-Röhrenverstärker.
Type-M: Simuliert großen Verstärker.
Type-J: Simuliert hellen zweifachen Doppellautsprecher-Röhrenverstärker.

MIC-Position
Front: Simuliert den Klang, der direkt vor den Lautsprechern zu hören ist.
Slant: Simuliert den Klang, der etwas rechts oder links von der vorderen Position zu hören ist.
Upper: Simuliert den Klang, der etwas oberhalb der vorderen Position zu hören ist.
ON: Simuliert den Klang, der bei eingeschaltetem Mikrophon zu hören ist.

Chorus CHORS, StCHO, D.CHO

Depth
Mit diesem Parameter stellen Sie die Tiefe des Chorus-Effekts ein. Wenn Sie einen Wert von 100% definieren, wird der Klang über eine Zeitspanne von ca. 40 ms moduliert. Wenn Sie 0% einstellen, wird der Chorus-Effekt nicht angewendet.
LFO Frequency
Mit diesem Parameter wird die Modulationsgeschwindigkeit für den Chorus-Effekt eingestellt. Im allgemeinen liegt die LFO-Frequenz für einen normalen Chorus-Effekt im Bereich zwischen 0,05 und 3 Hz.
Delay Time
Mit diesem Parameter stellen Sie die Verzögerungszeit für den Chorus-Effekt ein. Im allgemeinen zwischen 10 und 20 ms.
LFO Waveform
Dieser Parameter legt die Wellenform der Modulation fest. Wenn Sie SIN (Sinuswellen) auswählen, wird der Chorus-Effekt wellenförmig moduliert. Wenn Sie TRI (Dreieckswellen) auswählen, wird die Modulation abgeschwächt.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).
Direct Delay
Dieser Parameter legt die Verzögerungszeit für den direkten Klang fest.
LFO Phase
Dieser Parameter legt die LFO-Phasendifferenz zwischen CH1 und CH2 fest.

Teminology and Parameter Descriptions

Flanger FLANG, StFLN, D.FLN

Depth
Sets the depth of the flanger effect. Setting the depth to 100% modulates the sound over a time width of approximately 40 msec. 0% completely mutes the flanger effect.
LFO Frequency
Sets the flanger modulation speed.
LFO Waveform
Sets the modulation waveform.
SIN (sine wave), TRI (triangle wave), EXP1 (exponential wave), and EXP2 (the reverse of EXP1) can be selected.
Delay Time
Adjusts the delay time of the flanger.
Feedback Level
Increasing the feedback emphasizes the "shul-shul" sound which characterizes the flanger effect.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and effect sound (EFF).
Direct Delay
Sets the delay time of the direct sound.
LFO Phase
Sets the LFO phase difference between CH1 and CH2.
Feedback Mode
Sets whether total feedback or cross feedback is used to obtain the effect.

Terminologie et description des paramètres

Flanger FLANG, StFLN, D.FLN

Depth
Règle la profondeur de l'effet flanger. En réglant la profondeur à 100%, le son est modulé sur une largeur de temps d'environ 40 msec. 0% atténue complètement l'effet flanger.
LFO Frequency
Règle la vitesse de modulation du flanger.
LFO Waveform
Règle la forme d'onde modulée. Si SIN (onde sinusoïdale) est sélectionné, l'effet de flanger sera modulé avec un effet ondulant. Si TRI (onde triangulaire) est sélectionné, l'effet de modulation sera réduit.
Delay Time
Règle la temporisation du flanger.
Feedback level
L'augmentation du feedback accentue le son "shul-shul" caractéristique de l'effet flanger.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).
Direct Delay
Règle le temps de temporisation pour le son direct.
LFO Phase
Règle la différence de phase LFO entre le CH1 et le CH2.
Feedback Mode
Détermine si le feedback total ou le feedback croisé est utilisé pour obtenir l'effet.

Terminologie und Parameter "Description" (Beschreibung)

Flanger FLANG, StFLN, D.FLN

Depth
Mit diesem Parameter stellen Sie die Dauer des Flanger-Effekts ein. Wenn Sie einen Wert von 100% definieren, wird der Klang über eine Zeitspanne von ca. 40 ms moduliert. Wenn Sie 0% einstellen, wird der Chorus-Effekt nicht angewendet.
LFO Frequency
Mit diesem Parameter wird die Modulationsgeschwindigkeit für den Flanger-Effekt eingestellt.
LFO Waveform
Mit diesem Parameter wird die Wellenform der Modulation eingestellt. Sie können zwischen SIN (Sinuswellen), TRI (Dreieckswellen), EXP1 (Exponentialwellen) und EXP2 (umgekehrt wie bei EXP1) wählen.
Delay Time
Mit diesem Parameter stellen Sie die Verzögerungszeit für den Flanger-Effekt ein.
Feedback Level
Durch Erhöhen des Feedbacks betonen Sie den für den Flanger-Effekt charakteristischen "Shul-Shul"-Sound.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).
Direct Delay
Dieser Parameter legt die Verzögerungszeit für den direkten Klang fest.
LFO Phase
Dieser Parameter legt die LFO-Phasendifferenz zwischen CH1 und CH2 fest.
Feedback Mode
Mit diesem Parameter stellen Sie ein, ob zum Erzeugen des Effekts totales Feedback oder Cross-Feedback eingesetzt wird.

Teminology and Parameter Descriptions

Phase Shifter PHASE, StPHA, D.PHA

LFO Frequency
Sets the periodic cycle used for the phase effect.
Depth
Sets the depth of the phase effect.
Manual
Sets the center frequency used for the phase effect.
Resonance
Adjusts the amount of resonance.
Increasing the value of this parameter increases the strength of the overall effect.
Feedback Level
Sets the feedback level of the delay signal input to the phase shifter.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and effect sound (EFF).
LFO Phase
Sets the LFO phase difference between CH1 and CH2.
Delay Time
Sets the delay time of the signal input to the phase shifter.
Direct Delay
Sets the delay time of the direct sound.
Step Frequency
Adjusts the step time used when varying the phase effect in stages.

Terminologie et description des paramètres

Phase Shifter PHASE, StPHA, D.PHA

LFO Frequency
Règle le cycle périodique utilisé pour l'effet de phase.
Depth
Détermine la profondeur de l'effet de phase.
Manual
Règle la fréquence centrale utilisée pour l'effet de phase.
Resonance
Règle le taux de résonnance.
L'augmentation de la valeur de ce paramètre augmente l'intensité de l'effet global.
Feedback level
Règle le niveau de feedback du signal de temporisation injecté dans le décalage de phase.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).
LFO Phase
Règle la différence de phase LFO entre le CH1 et le CH2.
Delay Time
Règle la temporisation du signal injecté dans le décalage de phase.
Direct Delay
Règle le temps de temporisation pour le son direct.
Step Frequency
Règle la durée du pas utilisée lors d'une variation de l'effet de phase par pas.

Terminologie und Parameter "Description" (Beschreibung)

Phase Shifter PHASE, StPHA, D.PHA

LFO Frequency
Mit diesem Parameter wird der Zyklus für den Phase-Effekt eingestellt.
Depth
Dieser Parameter legt die Dauer des Effekts fest.
Manual
Mit diesem Parameter wird die für den Phase-Effekt verwendete Mittelfrequenz eingestellt.
Resonance
Mit diesem Parameter wird der gewünschte Resonanzwert eingestellt. Je höher der eingestellte Wert ist, desto stärker fällt insgesamt der Effekt aus.
Feedback Level
Dieser Parameter definiert den Rückkopplungspegel für den verzögerten Signaleingang beim Phase Shifter.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).
LFO Phase
Dieser Parameter legt die LFO-Phasendifferenz zwischen CH1 und CH2 fest.
Delay Time
Mit diesem Parameter stellen Sie die Verzögerungszeit für den Signaleingang beim Phase Shifter ein.
Direct Delay
Dieser Parameter legt die Verzögerungszeit für den direkten Klang fest.
Step Frequency
Mit diesem Parameter stellen Sie die Zeitspanne ein, mit der gearbeitet wird, wenn der Phase-Effekt in Stufen variiert wird.

Teminology and Parameter Descriptions

Vibrato VIBRT

Depth
Sets the depth of the vibrato effect.
LFO Frequency
Adjusts the periodic cycle used for the vibrato effect.
LFO Waveform
Selects how the pitch is varied.

Tremolo TREML

Depth
Sets the depth of the tremolo effect.
LFO Frequency
Adjusts the periodic cycle used for the tremolo effect.
LFO Waveform
Selects the waveform used to produce the tremolo effect.

Auto Pan A.PAN

Depth
Adjusts the width of the swing between channels caused by panning.
LFO Frequency
Adjusts the periodic cycle used for the auto pan effect.
LFO Waveform
Selects the waveform used for moving the sound image position.

Stereo Ensemble StENS

Depth
Adjusts the depth of the ensemble effect.
LFO Frequency
Sets the LFO frequency.
Delay Time
Adjusts the delay time of the effect sound.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and effect sound (EFF).

Terminologie et description des paramètres

Vibrato VIBRT

Depth
Règle la profondeur de l'effet vibrato.
LFO Frequency
Règle le cycle périodique utilisé pour l'effet de vibrato.
LFO Waveform
Sélectionne la manière dont le ton est modifié.

Tremolo TREML

Depth
Règle la profondeur de l'effet tremolo.
LFO Frequency
Règle le cycle périodique utilisé pour l'effet de tremolo.
LFO Waveform
Sélectionne la forme d'onde utilisée pour produire l'effet de tremolo.

Auto Pan A.PAN

Depth
Règle la largeur du balancement entre les canaux provoqué par le panoramique.
LFO Frequency
Règle le cycle périodique utilisé pour l'effet de panoramique.
LFO Waveform
Sélectionne la forme d'onde utilisée pour déplacer la position de l'image du son.

Stereo Ensemble StENS

Depth
Règle la profondeur de l'effet tremolo.
LFO Frequency
Règle la fréquence LFO.
Direct Delay
Règle le temps de temporisation pour le son à effet.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).

Terminologie und Parameter "Description" (Beschreibung)

Vibrato VIBRT

Depth
Dieser Parameter legt die Dauer des Effekts fest.
LFO Frequenz
Mit diesem Parameter wird der Zyklus für den Vibrato-Effekt eingestellt.
LFO Waveform
Mit diesem Parameter können Sie auswählen, wie die Tonhöhe variiert wird.

Tremolo TREML

Depth
Dieser Parameter legt die Dauer des Effekts fest.
LFO Frequency
Mit diesem Parameter wird der Zyklus für den Tremolo-Effekt eingestellt.
LFO Waveform
Mit diesem Parameter stellen Sie die Wellenform ein, die zum Erzeugen des Effekts verwendet wird.

Auto Pan A.PAN

Depth
Mit diesem Parameter stellen Sie die Schwingungsbreite zwischen den einzelnen Kanälen ein.
LFO Frequency
Mit diesem Parameter wird die LFO-Frequenz ausgewählt.
LFO Waveform
Mit diesem Parameter stellen Sie die Wellenform ein, die zum Erzeugen des Bewegungseffekts verwendet wird.

Stereo Ensemble StENS

Depth
Dieser Parameter legt die Dauer des Effekts fest.
LFO Frequency
Mit diesem Parameter wird die LFO-Frequenz festgelegt.
Delay Time
Mit diesem Parameter stellen Sie die Verzögerungszeit für den Effektklang ein.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).

Teminology and Parameter Descriptions

Pitch Shifter PITCH, I.PCH, REVRS

Pitch
Sets the pitch shift range. With the intelligent pitch shifter, settings are made in one degree increments along the scale. The setting range is ±2 octaves.
Fine (Intelligent Pitch Shifter only)
Finely adjusts the pitch to be shifted within a range of ±1 half step.
Feedback Level
Sets the feedback level.
Delay Time
Sets the delay time until the pitch is shifted.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and the effect sound (EFF).
Reverse Length
Sets the loop time of the reverse shift's reverse sound.
Base Key (Intelligent Pitch Shifter only)
Selects which key of the input sound will be the base key. The key set in this parameter is called the "tonic."
Scale Type (Intelligent Pitch Shifter only)
Selects the type of scale to use in varying the sound with respect to the 12 keys. (See the following page)
Control Source (Intelligent Pitch Shifter only)
Selects the input signal to use for controlling the intelligent pitch shifter function.
Selecting SIGNL sets the input signal as the source, while selecting MIDI sets the MIDI signal as the source.
Setting this parameter to "off" turns off the intelligent function.
Control Sense (Intelligent Pitch Shifter only)
Adjusts the intelligent function's sensitivity when the control source is set to SIGNL.
Note Interval (Intelligent Pitch Shifter only)
Determines how far to shift the notes which make up the scale.
Normally, this parameter is set automatically according to the selected scale type, but you can also set a different note configuration if desired. If you alter the automatically set values, the scale type will be displayed as "User."

Terminologie et description des paramètres

Pitch Shifter PITCH, I.PCH, REVRS

Pitch
Règle la plage de décalage du ton. Avec le décalage de ton intelligent, les réglages sont faits par pas d'un degré sur l'échelle. La plage de réglage est de ±2 octaves.
Fine (Intelligent Pitch Shifter uniquement)
Règle finement le ton à décaler dans une plage de ±1 pas.
Feedback level
Règle le niveau de feedback.
Delay Time
Règle la temporisation de décalage du ton.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).
Reverse Length
Règle la durée de boucle du son inverse du décalage inverse.
Base Key (intelligent Pitch Shifter uniquement)
Sélectionne le ton du son d'entrée qui sera le ton de base. Le ton réglé dans ce paramètre est dit "tonique"
Scale Type (Intelligent Pitch Shifter uniquement)
Sélectionne le type de gamme à utiliser pour modifier le son par rapport aux 12 notes (voir la page suivante).
Control source (intelligent Pitch Shifter uniquement)
Sélectionne le signal d'entrée à utiliser pour commander le décalage de ton intelligent.
Le choix de SIGNL règle le signal d'entrée comme source, et le choix de MIDI, le signal MIDI comme source.
Le réglage du paramètre sur "off" interrompt la fonction intelligente.
Control Sense (intelligent Pitch Shifter uniquement)
Règle la sensibilité de la fonction intelligente quand la source de commande est reglée sur SIGNL.
Note Interval (Intelligent Pitch Shifter uniquement)
Détermine l'importance du decalage des notes qui constituent la gamme.
Normalement, ce paramètre est reglé automatiquement en fonction du type de gamme choisie, mais vous pouvez aussi régler une autre configuration de notes. le cas echéant. Si vous modifiez les valeurs réglées automatiquement, le type de gamme sera indiqué par "User".

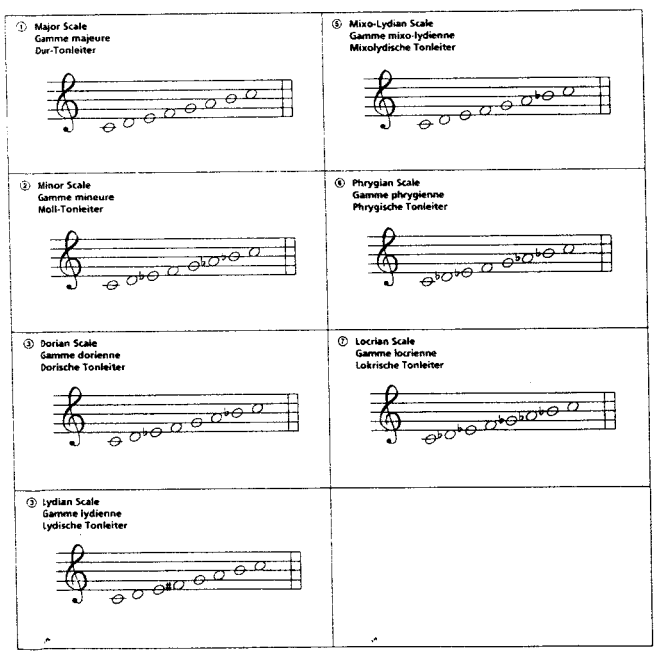
Terminologie und Parameter "Description" (Beschreibung)

Pitch Shifter PITCH, I.PCH, REVRS

Pitch
Mit diesem Parameter wird der Verschiebungsbereich für die Tonhöhe definiert. Beim Intelligent Pitch Shifter erfolgt die Einstellung mit Hilfe der Skala in Schritten von einer Einheit. Der Einstellbereich umfaßt +/- 2 Oktaven.
Fine (Nur Intelligent Pitch Shifter)
Die zu verschiebende Tonhöhe kann mit diesem Parameter feineingestellt werden (±1 Halbschritt).
Feedback Level
Mit diesem Parameter wird der Rückkopplung-pegel eingestellt.
Delay Time
Mit diesem Parameter stellen Sie die Zeitspanne ein, nach der die Tonhöhe verschoben wird.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).
Reverse Length
Mit diesem Parameter wird die Schleifenzeit (Loop Time) für den Reverse-Klang der umgekehrten Verschiebung festgelegt.
Base Key (nur Intelligent Pitch Shifter)
Mit diesem Parameter wählen Sie aus, welcher Ton des Klangeingangs als Grundton benutzt wird. Der mit diesem Parameter definierte Ton wird "Tonic" genannt.
Scale Type (nur Intelligent Pitch Shifter)
Mit diesem Parameter wird der Skalierungstyp ausgewählt, der beim Variieren des Klangs gemäß der 12 Schlüssel verwendet wird (siehe nächste Seite).
Control Source (nur Intelligent Pitch Shifter)
Mit diesem Parameter wird das Eingangssignal ausgewählt, das zum Steuern der Funktion Intelligent Pitch Shifter verwendet werden soll.
Wenn Sie SIGNL auswählen, gilt das Eingangssignal als Quelle. Wählen Sie MIDI aus, wird das MIDI-Signal als Quelle definiert.
Stellen Sie diesen Parameter auf "off", wird die Funktion Intelligent Pitch Shifter deaktiviert.
Control Sense (nur Intelligent Pitch Shifter)
Mit diesem Parameter wird die Sensitivität der Funktion eingestellt, wenn Control Source auf SIGNL gesetzt ist.
Note Interval (nur Intelligent Pitch Shifter)
Dieser Parameter legt fest, wie weit die Noten der Skala verschoben werden sollen.
Normalerweise wird dieser Parameter automatisch nach dem ausgewählten Skalierungstyp eingestellt. Aber Sie können falls gewünscht, auch andere Werte definieren. Wenn Sie die automatisch eingestellten Werte ändern, wird für den Skalierungstyp "User" angezeigt.

Teminology and Parameter Descriptions

Scale settings
Each of the seven types of scales selectable with the "Scale Type" parameter are set with the base key of the scale set to C.



Terminologie et description des paramètres

Réglages de la gamme
Les sept types de gammes disponibles avec le parametre "Scale Type" sont reglés avec la note de base de la gamme reglée sur C.

Terminologie und Parameter "Description" (Beschreibung)

Tonleitereinstellungen
Jede der sieben mit dem Parameter "Scale Type" wählbaren Tonleiterarten ist mit dem Grundton auf C eingestellt.

Teminology and Parameter Descriptions

Delay MdDLY, TpDLY, DbDLY, HdDLY, SwDLY, StDLY, TmDLY, DcDLY

Delay Time
Sets the delay time (the time until the echo sound is generated).
Feedback Level
Feedback is the process of returning the delay signal to the delay input. This parameter sets the level of the returned signal.
Feedback Mode
Sets whether to return the feedback of each channel to the same channel (NORMAL) or to return each feedback signal to the opposite channel (CROSS).
LPF Frequency
The low-pass filter blocks high frequencies and only passes signals that are below a certain frequency. This parameter sets that cut-off frequency.
HPF Frequency
The high-pass filter blocks low frequencies and only passes signals that are above a certain frequency. This parameter sets that cut-off frequency.
Release Level
Adjusts the level of the delay sound that remains when an effect is switched from the on state to the off state.
Tap Time
Sets the delay time of each tap output from the delay line.
Tap Level
Sets the delay level of each tap output from the delay line.
Delay Level
Sets the level of the signal output from the delay line.
Cross Feedback
Sets the level of the feedback signals when the signals are returned to the opposite channels.
REC Trigger
Recording is carried out only when this trigger is on. When the trigger is switched off, the recorded contents are automatically played back.
Time Fine
Performs fine adjustments of the delay time.
ENV Sensitivity
Adjusts the input signal sensitivity of the envelope follower. Setting a large value increases the modulation effect.
Manual Control
Used for manually controlling the modulation effect.

Terminologie et description des paramètres

Delay MdDLY, TpDLY, DbDLY, HdDLY SwDLY, StDLY, TmDLY, DcDLY

Delay Time
Règle le temps de temporisation (le laps de temps avant de générer le son d'écho).
Feedback Level
Le feedback est le procede consistant a renvoyer le signal de temporisation a l'entrée de la temporisation. Ce parametre regle le niveau du signal renvoye.
Feedback Mode
Determine si le feedback de chaque canal est renvoye au même canal (NORMAL) ou au canal oppose (CROSS).
LPF Frequency
Le filtre passe-bas bloque les hautes fréquences et ne laisse pas passer le signal au-dessous d'une certaine fréquence. Ce paramètre regle cette fréquence de coupure.
HPF Frequency
Le filtre passe-haut bloque les basses fréquences et ne laisse pas passer le signal au-dessous d'une certaine fréquence. Ce paramètre régle cette fréquence de coupure.
Release Level
Règle le niveau du son temporisé qui reste quand un effet est desactive.
Tap Time
Règle la temporisation de chaque sortie tap de la ligne de temporisation.
Tap Level
Règle le niveau de temporisation de chaque sortie tap de la ligne de temporisation.
Delay Level
Règle le niveau de la sortie du signal de la ligne de temporisation.
Cross Feedback
Règle le niveau des signaux de feedback quand les signaux sont renvoyes aux canaux opposes.
REC Trigger
L'enregistrement n'a lieu que lorsque ce déclencheur est activé. Quand le déclencheur est désactivé, les passages enregistrés sont automatiquement joues.
Time Fine
Assure un réglage fin de la temporisation.
ENV Sensitivity
Règle la sensibilité du signal d'entrée du suiveur d'enveloppe. Une valeur elevée augmente l'effet de modulation.
Manual Control
Utilisé pour contrôler manuellement l'effet de modulation.

Terminologie und Parameter "Description" (Beschreibung)

Delay MdDLY, TpDLY, DbDLY, HdDLY SwDLY, StDLY, TmDLY, DcDLY

Delay Time
Dieser Parameter legt die Verzögerungszeit fest, also die Zeitspanne, die bis zum Erzeugen des Echos vergeht.
Feedback Level
Als Feedback (Rückkopplung) bezeichnet man das Zurückgeben des Verzögerungssignals an den Verzögerungseingang (Delay Input). Mit Hilfe dieses Parameters wird der Pegel des zurückgegebenen Signals eingestellt.
Feedback Mode
Mit Hilfe dieses Parameters wird festgelegt, ob das Feedback jedes Kanals an denselben Kanal (NORMAL) oder an den gegenüberliegenden Kanal (CROSS) zurückgegeben wird.
LPF Frequency
Der Tiefpaßfilter blockiert die hohen Frequenzen und läßt nur Signale passieren, deren Frequenz unter einer bestimmten Grenzfrequenz liegt. Diese Grenzfrequenz wird mit diesem Parameter eingestellt.
HPF Frequency
Der Hochpaßfilter blockiert die niedrigen Frequenzen und läßt nur Signale passieren, deren Frequenz über einer bestimmten Grenzfrequenz liegt. Diese Grenzfrequenz wird mit diesem Parameter eingestellt.
Release Level
Mit diesem Parameter stellen Sie den Pegel des Verzögerungsklangs ein, der verbleibt, wenn ein Effekt vom Status "On" in den Status "Off" geschaltet wird.
Tap Time
Mit diesem Parameter stellen Sie die Verzögerungszeit für jedes Tap-Ausgangssignal aus der Verzögerungsleitung ein.
Tap Level
Mit diesem Parameter stellen Sie den Verzögerungspegel für jedes Tap-Ausgangssignal aus der Verzögerungsleitung ein.
Delay Level
Dieser Parameter legt den Pegel für das Ausgangssignal aus der Verzögerungsleitung fest.
Cross Feedback
Mit diesem Parameter stellen Sie den Pegel für die Rückkopplungssignale ein, wenn die Signale an die entgegengesetzten Kanäle zurückgegeben werden.
REC Trigger
Die Aufnahme erfolgt nur, wenn dieser Schalter auf "On" gestellt wurde. Ansonsten werden die aufgenommenen Daten automatisch wiedergegeben.
Time Fine
Mit diesem Parameter können Sie die Verzögerungszeit genau einstellen.
ENV Sensitivity
Mit diesem Parameter stellen Sie die Eingangssignalsensitivität des sog. "Envelope followers" ein. Je höher der eingestellte Wert ist, desto stärker fällt der Modulationseffekt aus.
Manual Control
Mit Hilfe dieses Parameters können Sie den Modulationseffekt manuell steuern.

Teminology and Parameter Descriptions

Control Source
Selects what will be used to perform the modulation. CH1 and CH2 select the input signals of the corresponding effect blocks. IN1 selects the signals output from the front panel's input volume control (the signals input to the initial block), and MANUL selects the manual control value.
Depth
Sets the depth of the modulation.
LFO Frequency
Sets the LFO frequency.
LFO Waveform
Selects the LFO waveform applied to the modulation.
LFO Phase
Sets the LFO phase difference between the two signals.
Tempo
Sets the tempo. The tempo is displayed in the number of quarter notes (beats) per minute.
Note
Sets the sound length as a note. Notes are displayed as shown in the following chart.

Terminologie et description des paramètres

Control Source
Sélectionne ce qui sera utilisé pour exécuter la modulation. CH1 et CH2 sélectionnent les signaux des blocs d'effet correspondant. IN1 sélectionne les signaux de sortie de la commande de volume d'entrée du panneau avant (les signaux envoyés au bloc initial), et MANUL sélectionne la valeur de contrôle manuelle.
Depth
Règle la profondeur de la modulation.
LFO Frequency
Règle la fréquence LFO.
LFO Waveform
Sélectionne la forme d'onde appliquée à la modulation.
LFO Phase
Règle la différence de phase LFO entre les deux signaux.
Tempo
Règle le tempo. Le tempo est exprimé par le nombre de noires (temps) par minute.
Note
Règle la longueur du son comme une note. Les notes sont affichées comme dans le tableau ci-dessous.

Terminologie und Parameter "Description" (Beschreibung)

Control Source
Dieser Parameter legt fest, mit welchen Signalen und Kanälen die Modulation ausgeführt wird. Mit Hilfe von CH1 und CH2 werden die Eingangssignale der jeweiligen Effektblöcke ausgewählt, anhand von IN1 der Signalausgang über die Eingangsleistungssteuerung an der Vorderseite (Signaleingang zum Eingangsblock) eingestellt. Über MANUL wählen Sie den Wert für die manuelle Steuerung aus.
Depth
Mit diesem Parameter stellen Sie die Dauer der Modulation ein.
LFO Frequency
Mit diesem Parameter stellen Sie die LFO-Frequenz ein.
LFO Waveform
Mit diesem Parameter stellen Sie LFO-Wellenform ein, die auf die Modulation angewendet wird.
LFO Phase
Dieser Parameter legt die LFO-Phasendifferenz zwischen zwei Signalen fest.
Tempo
Mit diesem Parameter stellen Sie das Tempo ein. Das Tempo wird in Viertelnoten (Beats) pro Minute angezeigt.
Note
Mit diesem Parameter wird die Klanglänge eingestellt und als Note ausgedrückt. Noten werden folgendermaßen angezeigt:

Display / Affichage / Anzeige	4	SD	8	8/3	16	16/3	32
Note	♩	♪.	♪	♪3	𝅘𝅥𝅯	𝅘𝅥𝅯3	𝅘𝅥𝅰

Threshold
When the control signal input for the ducking delay exceeds this level, the delay sound is either output (when the control polarity is set to "normal") or muted (when the control polarity is set to "inverse").
Control Target
This parameter determines whether to control the ducking delay's "pre", "post" or "FB" level.
Control Polarity
Sets whether to control the ducking delay pre/post/FB level normally (turns on when the threshold is exceeded) or inversely (mutes when the threshold is exceeded).
Attack Time
Sets the attack time of the ducking delay pre/post/FB level.
Release Time
Sets the attack time of the ducking delay pre/post/FB level.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and effect sound (EFF).

Treshold
Quand l'entrée du signal de commande pour la temporisation ducking dépasse ce niveau, le son de temporisation est soit émis (quand la polarité de commande est réglée sur "normal") ou atténué (quand la polarité de commande est réglée sur "inverse").
Control Target
Ce paramètre détermine la régulation du niveau "pre", "post" ou "FB" de la temporisation ducking.
Control Polarity
Règle la régulation du niveau pre/post/FB de temporisation ducking (activée quand le seuil est dépassé) ou inversement (atténué quand le seuil est dépassé).
Attack Time
Règle le temps d'attaque du niveau pre/post/FB de la temporisation ducking.
Release Time
Règle le temps d'attaque du niveau pre/post/FB de la temporisation ducking.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).

Threshold
Wenn das Steuereingangssignal für die Ducking-Verzögerung diesen Pegel übersteigt, wird der Verzögerungsklang entweder ausgegeben (Steuerungspolarität "normal") oder unterdrückt (Steuerungspolarität "inverse").
Control Target
Mit diesem Parameter stellen Sie ein, ob der "Pre"-, "Post"- oder "FB"-Pegel der Ducking-Verzögerung gesteuert werden soll.
Control Polarity
Dieser Parameter legt fest, ob der "Pre"-/"Post"-/"FB"-Pegel der Ducking-Verzögerung normal oder invers gesteuert werden soll. Bei normaler Steuerung wird der Klang bei Überschreiten des Schwellenwerts ausgegeben, bei inverser Steuerung unterdrückt.
Attack Time
Mit diesem Parameter stellen Sie die Ansprechzeit für den "Pre"-/"Post"-/"FB"-Pegel der Ducking-Verzögerung ein.
Release Time
Mit diesem Parameter stellen Sie die Ansprechzeit für den "Pre"-/"Post"-/"FB"-Pegel der Ducking-Verzögerung ein.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).

Teminology and Parameter Descriptions

Reverb HALL, ROOM, PLATE

Reverb Time
Sets the reverberation time.
Predelay Time
Sets the time from when the original sound is input to when the reverb sound is output.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and effect sound (EFF).
Size
Sets the size of the reverberation box for each reverb type.
This parameter controls the size of the sound field without changing the characteristics of the effect.
Spread
Sets the expansiveness (spread) of the reverb effect. Larger values produce a more expansive atmosphere.
Presence Control
This acts as the high-range tone control for the reverb block.
Rotate High
Sets the reverberation time of the reverb sound's high frequency range. Smaller values increase the attenuation of the high range.

Terminologie et description des paramètres

Reverb HALL, ROOM, PLATE

Reverb Time
Règle le temps de réverbération.
Predelay Time
Règle le temps entre l'entrée du son original et la sortie du son réverbéré.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).
Size
Règle la taille de la boîte de réverbération pour chaque type de réverbération. Ce paramètre commande la taille du champ sonore sans modifier les caractéristiques de l'effet.
Spread
Règle l'expansion (spread) de la réverbération. Une valeur élevée donne une atmosphère plus expansive.
Presence Control
Ceci agit comme la commande de tonalité hautes fréquences pour le bloc de réverbération.
Rotate High
Règle le temps de reverbération de la plage de fréquences du son réverbéré. Une valeur faible diminue l'atténuation de la plage haute.

Terminologie und Parameter "Description" (Beschreibung)

Reverb HALL, ROOM, PLATE

Reverb Time
Mit diesem Parameter stellen Sie die Halldauer ein.
Predelay Time
Mit diesem Parameter stellen Sie die Zeitspanne ein, die zwischen dem Eingang des Originalklangs und dem Ausgang des Halliklangs verstreichen soll.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).
Size
Dieser Parameter stellt für jeden Halltyp die Größe der Hallbox ein.
Er steuert die Größe des Klangfelds, ohne die charakteristische Merkmale des Effekts zu verändern.
Spread
Mit diesem Parameter stellen Sie die Dauer bzw. Länge des Halls ein. Je höher der eingestellte Wert ist, desto länger wird der Hall gedehnt.
Presence Control
Dieser Parameter dient zur Klangkontrolle im hohen Frequenzbereich des Halleffekts.
Rotate High
Mit diesem Parameter stellen Sie die Hallzeit für den hohen Frequenzbereich des Halls ein. Je kleiner der eingestellte Wert ist, desto stärker wird der hohe Frequenzbereich abgeschwächt (...gedämpft).

Teminology and Parameter Descriptions

Gated Reverb GtREV

Gate Time
This is a parameter within the gated reverb effect that adjusts the time from when the reverb sound starts to when the release begins.
Envelope Form
This is the envelope within the gate time.
Envelope Direction
The envelope form normally tapers along with the time. However, if the envelope direction is set to REV (reverse), the envelope form will peak at the end point of the gate time.
Envelope Time
This parameter changes the envelope level attenuation amount. For example, when the gate time is set to infinity, this parameter adjusts the time required for the level to fall 0dB from the peak level.
Release Form
This parameter changes the release attenuation time. The tone color within the gate time also changes.

Terminologie et description des paramètres

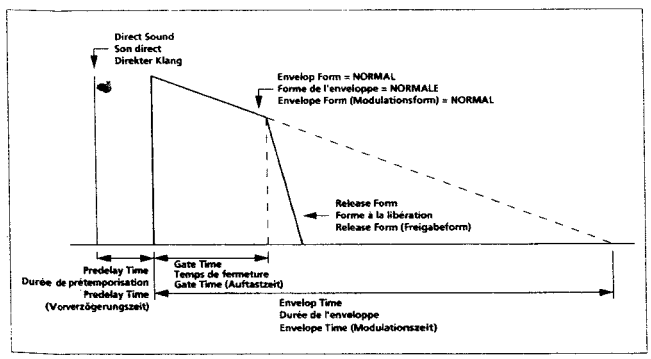
Gated Reverb GtREV

Gate Time
Il s'agit d'un parametre inclu à l'effet de reverbération à gâchette qui règle le temps entre le demarrage du son reverbere jusqu'au déclenchement de la libération.
Enveloppe Form
Il s'agit de l'enveloppe reprise dans le temps de fermeture.
Enveloppe Direction
La forme d'enveloppe accompagne normalement le temps. Mais si le sens de l'enveloppe est réglé sur REV (inverse), la forme d'enveloppe atteint son sommet au point final du temps de fermeture.
Envelope Time
Ce paramètre modifie le taux d'attenuation du niveau d'enveloppe. Par exemple, quand le temps de fermeture est réglé sur l'infini, ce parametre règle le temps requis pour le niveau passe du niveau de crête à 60 dB.
Release Form
Ce parametre modifie la durée d'attenuation de libération. La couleur du timbre change aussi pendant le temps de fermeture.

Terminologie und Parameter "Description" (Beschreibung)

Gated Reverb GtREV

Gate Time
Mit diesem Parameter stellen Sie die Zeitspanne ein, die vom Starten des Halls bis zu dessen Freigabe verstreichen soll.
Envelope Form
Die Modulation innerhalb der Auftastzeit (Gate Time).
Envelope Direction
Die Form der Hüllkurve richtet sich normalerweise nach der eingestellten Zeit. Wenn jedoch als Richtung REV (reverse, rückwärts) eingestellt wurde, erreicht die Modulation ihren höchsten Punkt am Ende der Auftastzeit (Gate Time).
Envelope Time
Mit diesem Parameter ändern Sie die Dämpfung des Modulationspegels. Wenn die Auftastzeit z. B. auf Unendlich gestellt ist, stellt dieser Parameter die Zeitspanne ein, die benötigt wird, damit der Pegel von seinem Spitzenwert um 60 dB abfällt.
Release Form
Mit diesem Parameter wird die Freigabezeit für die Dämpfung geändert. Innerhalb der Auftastzeit ändert sich auch die Klangfarbe.



Teminology and Parameter Descriptions

Ring Modulator RING

OSC Frequency
Sets the oscillator frequency of the sine wave generator.
Modulation Source
Selects the modulation wave to use as the ring modulator's modulation source. OSC selects the sine wave from the sine wave generator, while SIG selects the input signal.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and the effect sound (EFF).

Rotary Speaker ROTRY

Speed Select
Varies the rotation speed of the virtual rotary speaker.
Drive
Adjusts the overdrive distortion.
Depth
Adjusts the depth of the rotary effect.
Speed Ratio
Sets the rotation speed of the horn speaker (high range) relative to the rotation speed of the rotor speaker (low range).
Speaker Balance
Adjusts the mix level of the horn speaker and rotor speaker.
Effect Balance
Adjusts the mix balance of the dry sound (DRY) and the effect sound (EFF).

Terminologie et description des paramètres

Ring Modulator RING

OSC Frequency
Règle la fréquence d'oscillation du générateur d'onde sinusoïdale.
Source de modulation
Sélectionne l'onde de modulation à utiliser comme source de modulation pour le modulateur de sonnerie. OSC sélectionne l'onde sinusoïdale du generateur d'onde sinusoïdale, tandis que SIG sélectionne le signal d'entrée.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).

Rotary Speaker ROTRY

Speed Select
Modifie la vitesse de rotation du haut-parleur rotatif virtuel.
Drive
Règle la distorsion de surmodulation.
Depth
Règle la profondeur de l'effet rotatif.
Speed Ratio
Règle la vitesse de rotation du haut-parleur à pavillon (hautes fréquences) par rapport à la vitesse de rotation du haut-parleur rotorique (basses fréquences).
Speaker Balance
Règle le niveau de mélange entre haut-parleur à pavillon et haut-parleur rotorique.
Effect Balance
Règle l'équilibre de mélange du son sec (DRY) et du son à effet (EFF).

Terminologie und Parameter "Description" (Beschreibung)

Ring Modulator RING

OSC Frequency
Mit diesem Parameter wird die Oszillatorfrequenz des Sinuswellengenerators eingestellt.
Modulation Source
Mit diesem Parameter wird die Modulationswelle festgelegt, die als Modulationsquelle des Ringmodulators verwendet werden soll. OSC wählt eine Sinuswelle vom Sinuswellengenerator aus, während DIG das Eingangssignal definiert.
Effect Balance
Dieser Parameter sorgt für den Abgleich zwischen "trockenem" Klang (DRY) und Effektklang (EFF).

Rotary Speaker ROTRY

Speed Select
Mit diesem Parameter wird Drehgeschwindigkeit des virtuellen, sich drehenden Lautsprechers variiert.
Drive
Mit diesem Parameter wird die Overdrive-Verzerrung eingestellt.
Depth
Mit diesem Parameter wird die Dauer des Drehtefekts eingestellt.
Speed Ratio
Dieser Parameter legt die Drehgeschwindigkeit des Horn-Lautsprechers (hoher Frequenzbereich) relativ zur Drehgeschwindigkeit des Rotor-Lautsprechers (niedriger Frequenzbereich) fest.
Speaker Balance
Mit diesem Parameter wird der Mischpegel für Horn- und Rotor-Lautsprecher eingestellt.
Effect Balance
Regelt die Mischung von "trockenem" Klang (DRY) und Effektklang (EFF).

GUITAR PROCESSOR HR-GPS Jan. 1, '94
MIDI Implementation Chart/Tableau d'implémentation MIDI/MIDI-Implementationsdiagramm Version: 1.0

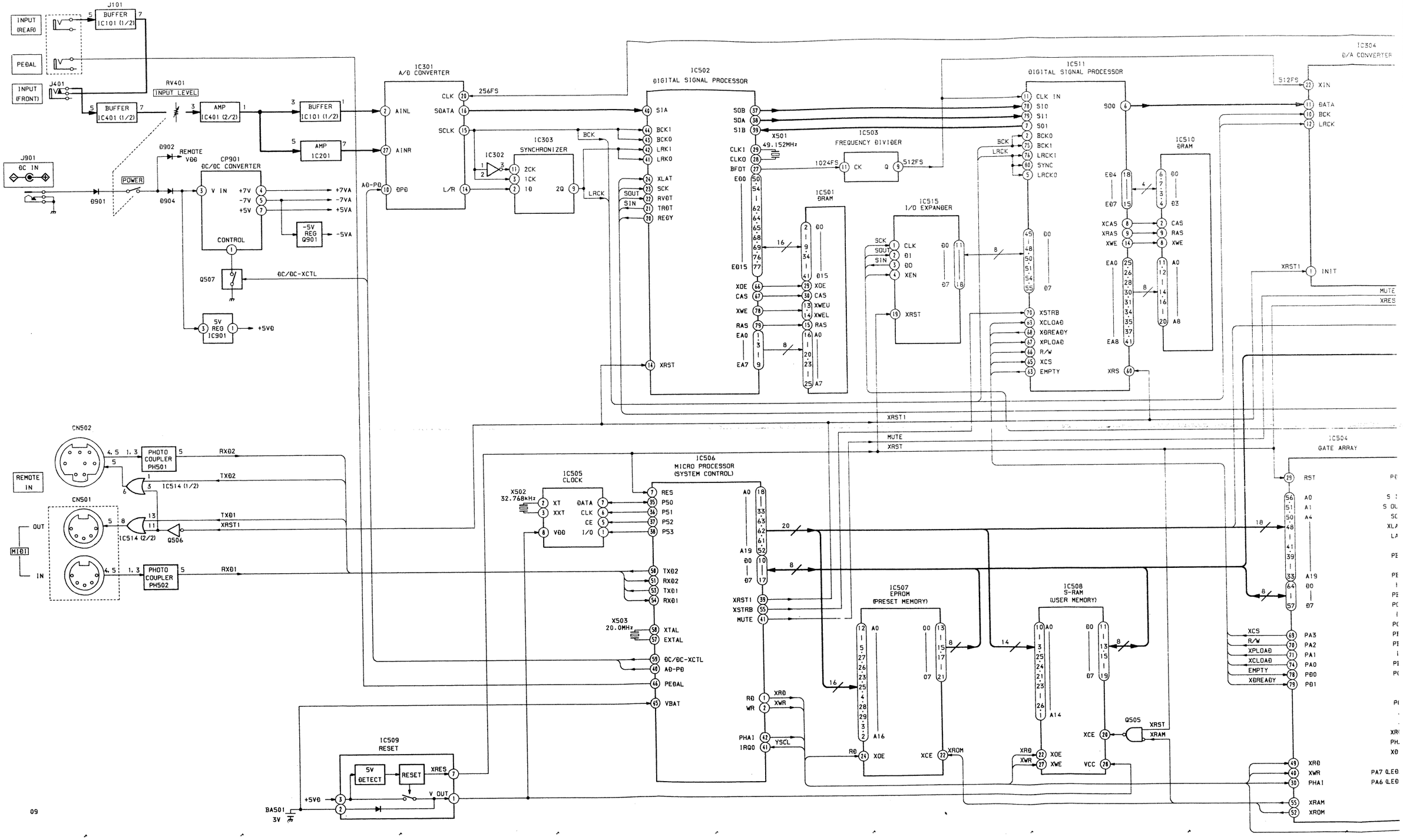
Function ...		Transmitted	Recognized	Remarks
Basic	Default	X	1 - 16	Memorized
Channel	Changed	X	1 - 16	
Mode	Default	X	OMNI ON/OFF	Memorized
	Messages	X	X	
	Altered	**********		
Note Number:	True voice	**********	○ 0 - 127	No sound
Velocity	Note ON	X	○9n, V=0 - 127	
	Note OFF	X	X	
After Touch	Key's	X	X	
	Ch's	X	○	
Pitch Bend		X	○	
Control Change	0 - 31, 64 - 120	X	○	
Prog Change :	True #	X **********	○ 0 - 127	
System Exclusive		○	○	
Common	: Song Pos	X	X	
	: Song Sel	X	X	
	: Tune	X	X	
System Real Time	: Clock	X	○	
	: Commands	X	X	
Aux Messages	: Local ON/OFF	X	X	
	: All Notes OFF	X	X	
	: Active Sense	X	X	
	: Reset	X	X	
Notes				

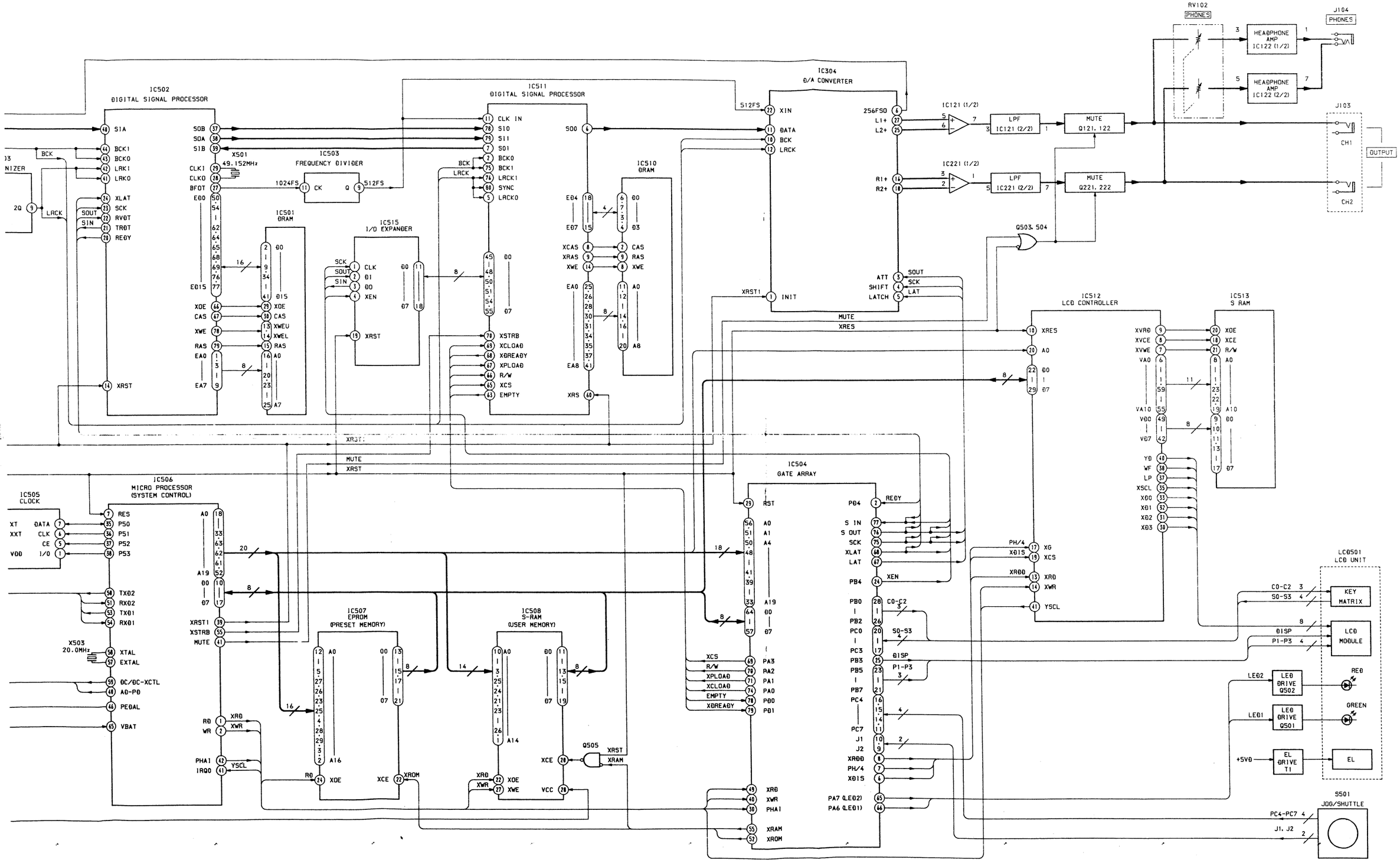
Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO X : No

113

SECTION 2
DIAGRAMS

2-1. BLOCK DIAGRAM




IC502
DIGITAL SIGNAL PROCESSOR
IC511
DIGITAL SIGNAL PROCESSOR
IC304
D/A CONVERTER
IC501
DRAM
IC503
FREQUENCY DIVIDER
IC510
DRAM
IC515
I/O EXPANDER
X501
49.152MHz
X503
20.0MHz
IC121 (1/2)
IC221 (1/2)
LPF
IC121 (2/2)
LPF
IC221 (2/2)
MUTE
Q121, 122
MUTE
Q221, 222
Q503, 504
RV102
PHONES
J104
PHONES
HEADPHONE AMP
IC122 (1/2)
HEADPHONE AMP
IC122 (2/2)
J103
OUTPUT
CH1
CH2
IC512
LCD CONTROLLER
IC513
S RAM
MUTE
XRES
XRST1
MUTE
XRST
IC505
CLOCK
IC506
MICRO PROCESSOR
(SYSTEM CONTROL)
IC504
GATE ARRAY
IC507
EPROM
(PRESET MEMORY)
IC508
S-RAM
(USER MEMORY)
Q505
LCD501
LCD UNIT
KEY MATRIX
LCD MODULE
LED DRIVE Q502
LED DRIVE Q501
EL DRIVE T1
EL
S501
JOG/SHUTTLE

2-2. PRINTED WIRING BOARDS

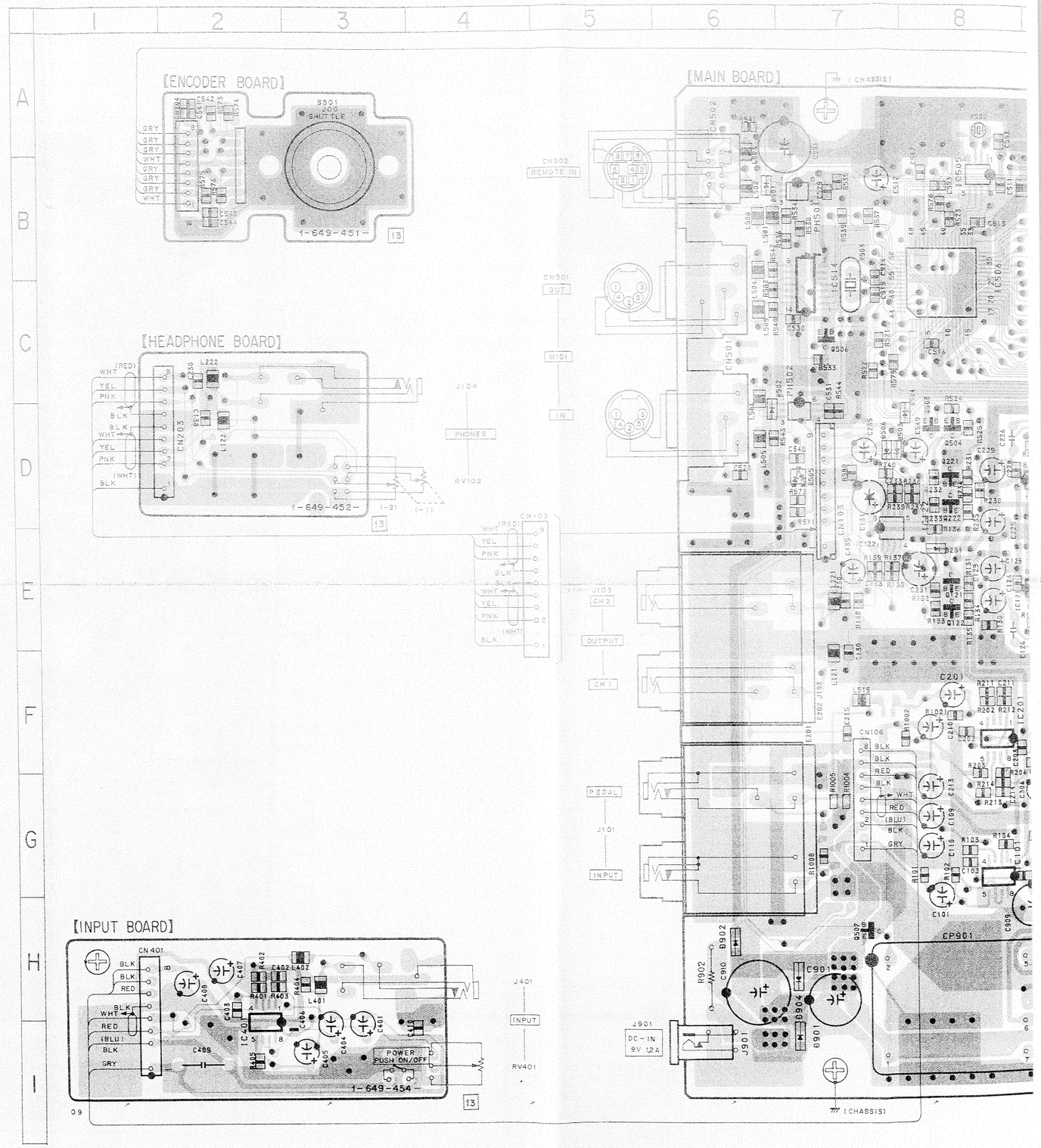
• See page 37 for Semiconductor Lead Layouts.

• SEMICONDUCTOR LOCATION

Ref. No.	Location
D201	F-9
D202	F-9
D231	E-8
D501	B-6
D502	D-6
D503	D-7
D504	D-8
D505	D-7
D506	D-7
D901	H-7
D902	H-6
D903	H-10
D904	H-7
IC101	G-8
IC121	E-9
IC122	E-7
IC201	F-8
IC221	D-9
IC301	G-9
IC302	F-10
IC303	G-10
IC304	E-10
IC401	I-2
IC501	H-11
IC502	F-11
IC503	F-11
IC504	C-13
IC505	B-8
IC506	C-8
IC507	C-9
IC508	C-10
IC509	B-11
IC510	E-11
IC511	D-11
IC512	E-13
IC513	F-13
IC514	C-7
IC515	C-11
IC901	I-10
Q121	E-8
Q122	E-8
Q221	D-8
Q222	D-8
Q501	C-12
Q502	C-12
Q503	D-8
Q504	D-8
Q505	B-10
Q506	C-7
Q507	H-7
Q901	H-9

NOTE :

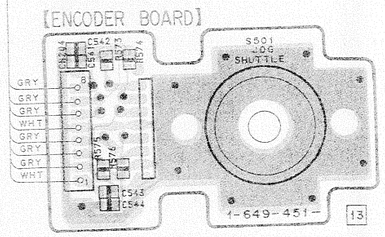
- ○—— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enable seeing.
- ▒▒ : Pattern of the side rear side.



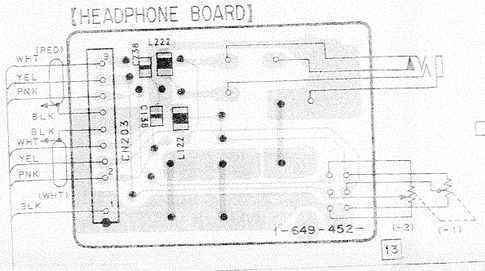
2-2. PRINTED WIRING BOARDS

• See page 37 for Semiconductor Lead Layouts.

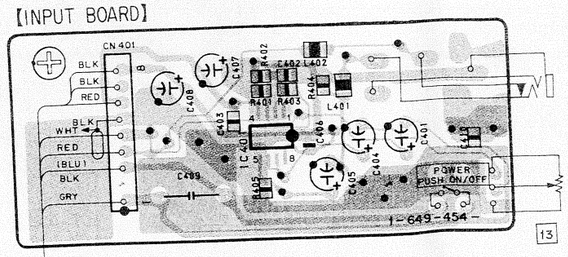
【ENCODER BOARD】



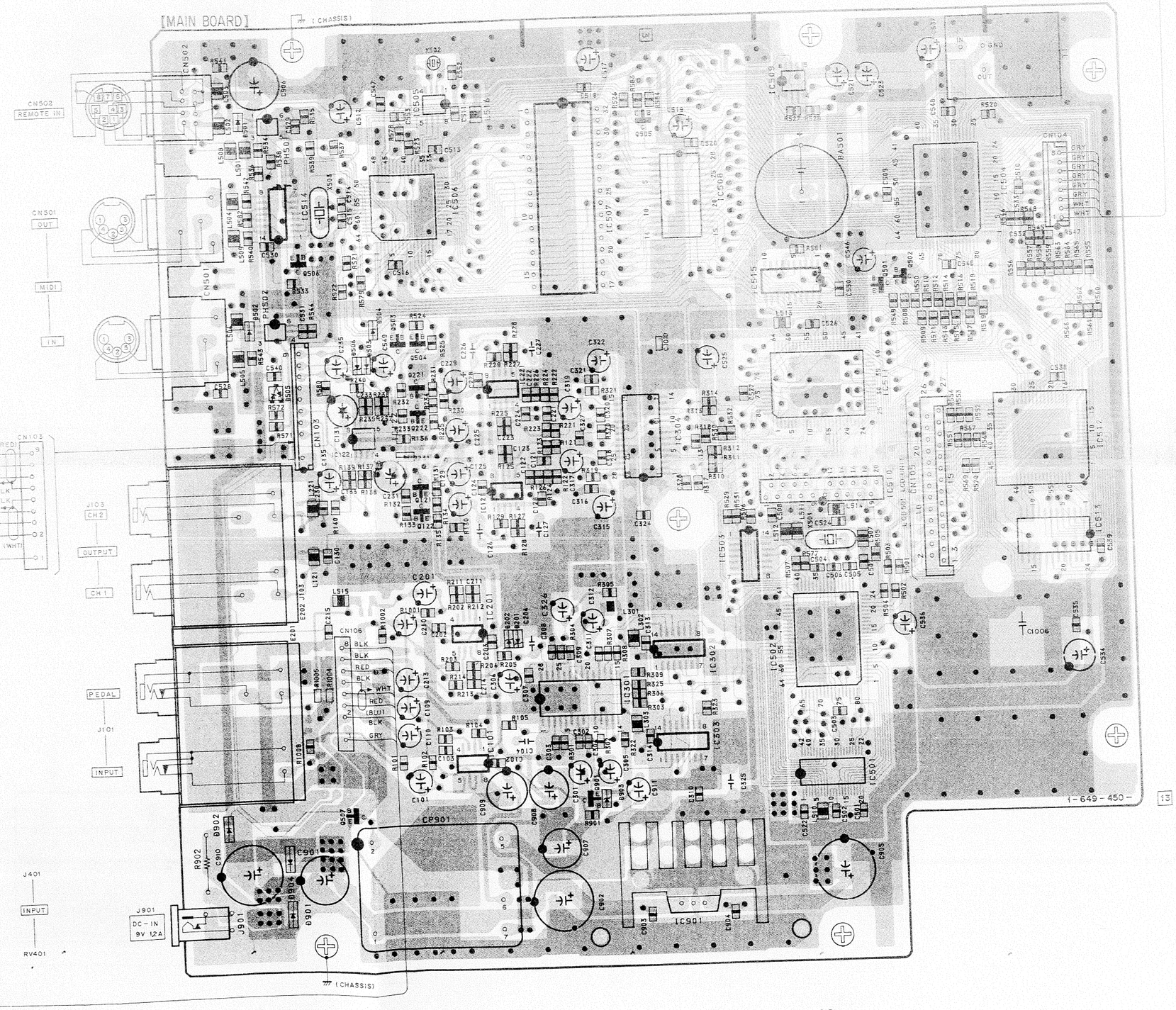
【HEADPHONE BOARD】



【INPUT BOARD】

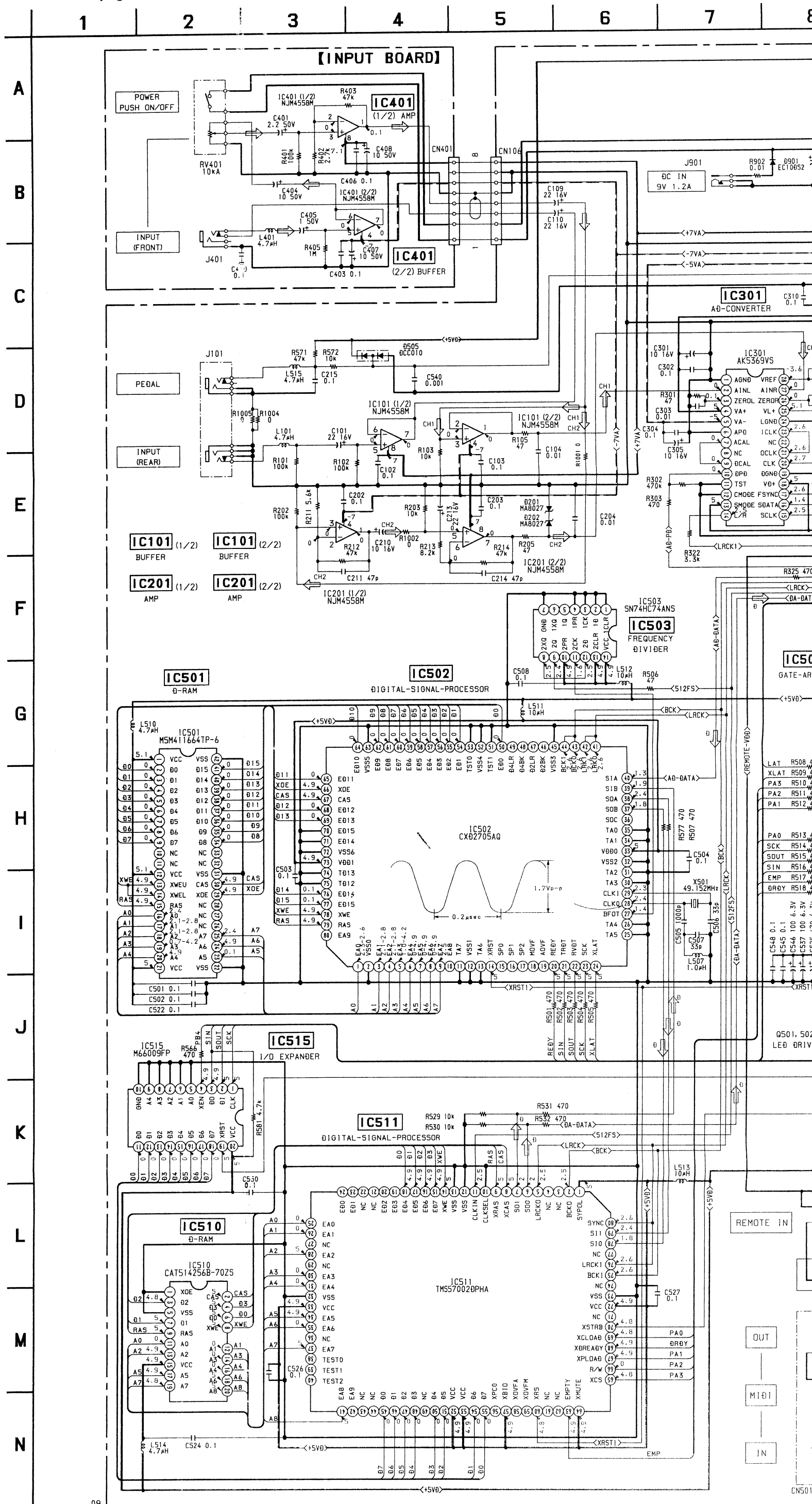


【MAIN BOARD】

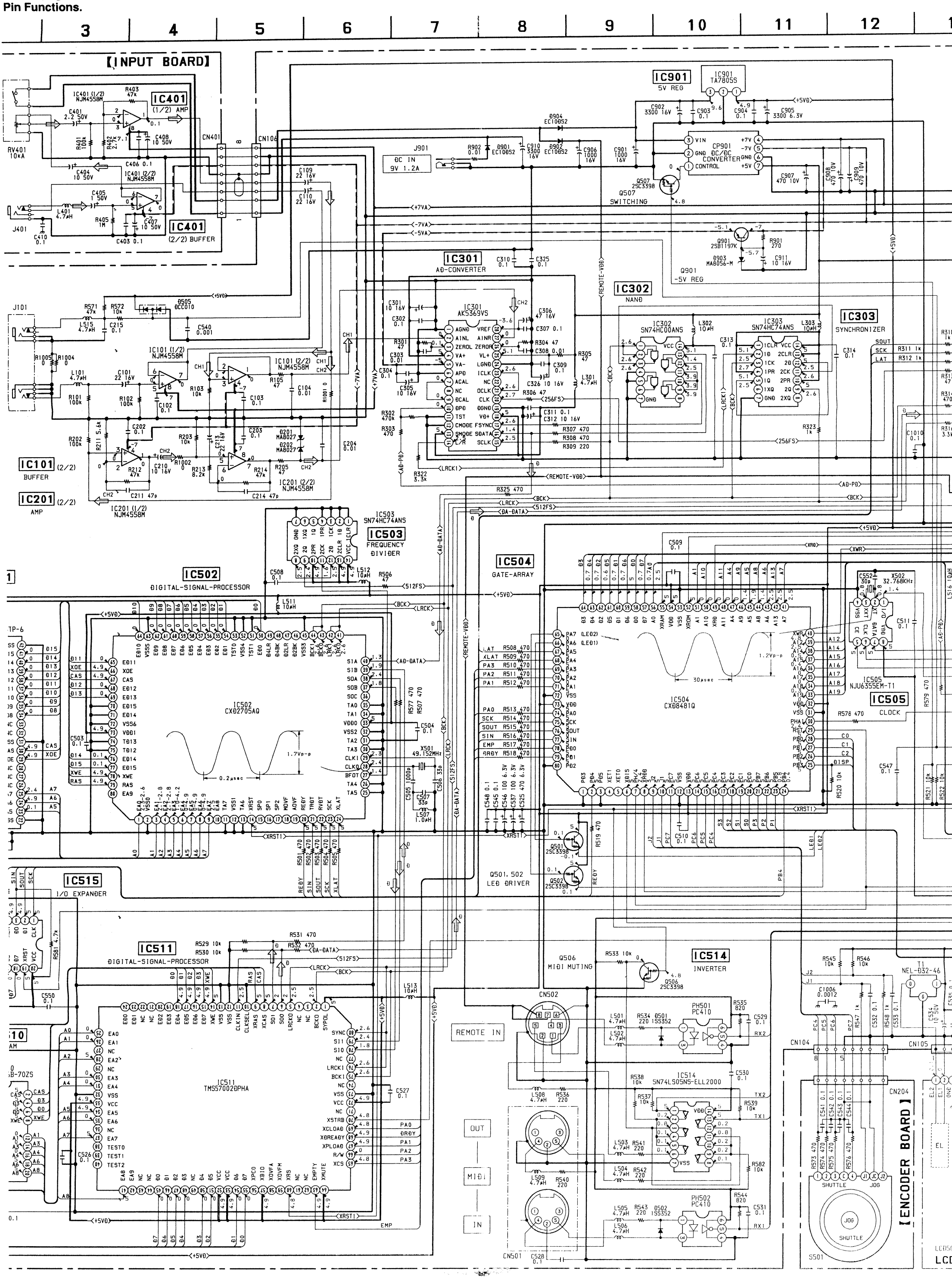


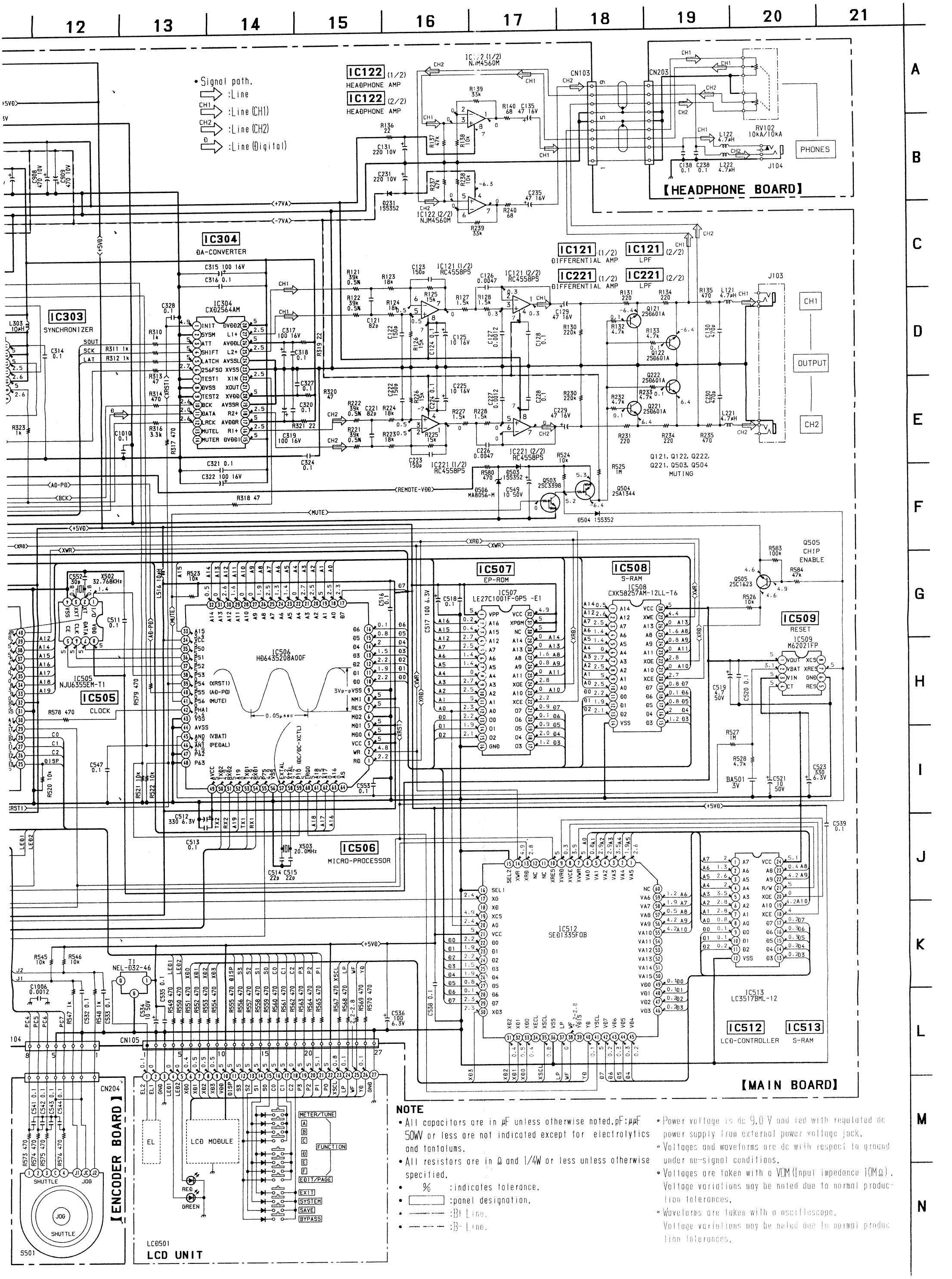
2-3. SCHEMATIC DIAGRAM

- See page 33 for IC Block Diagrams.
- See page 35 for IC Pin Functions.



AM
Block Diagrams.
Pin Functions.



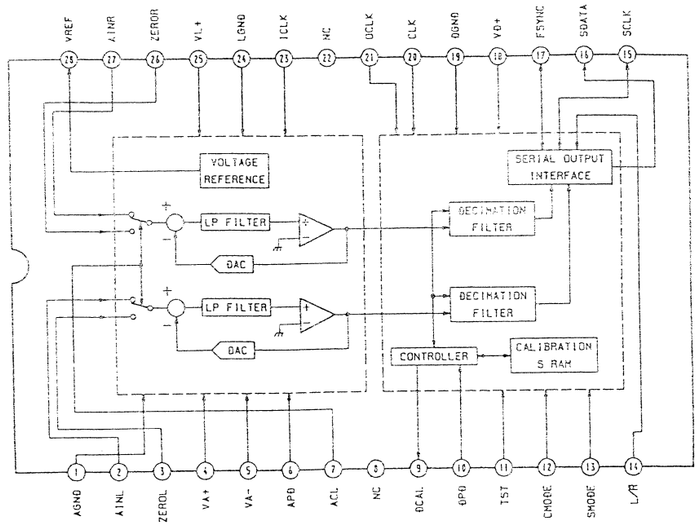


NOTE

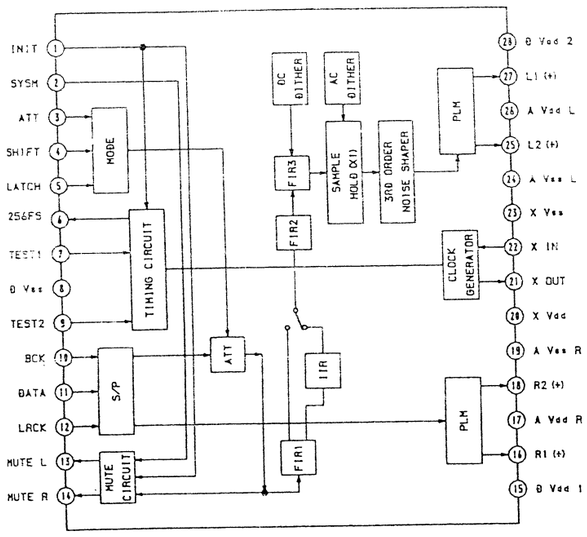
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- ▭ :panel designation.
- ——— :B+ Line.
- — — — :B- Line.
- Power voltage is dc 9.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.

2-4. IC BLOCK DIAGRAMS

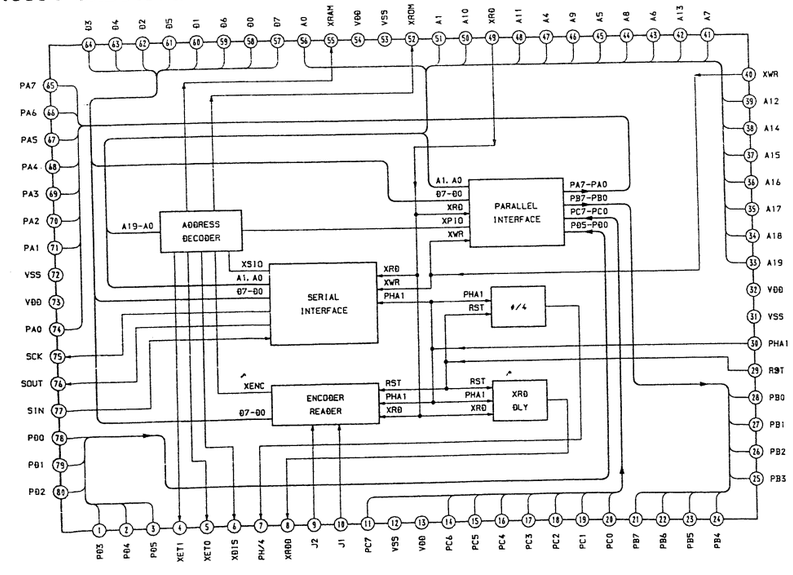
IC301 AK5369VS



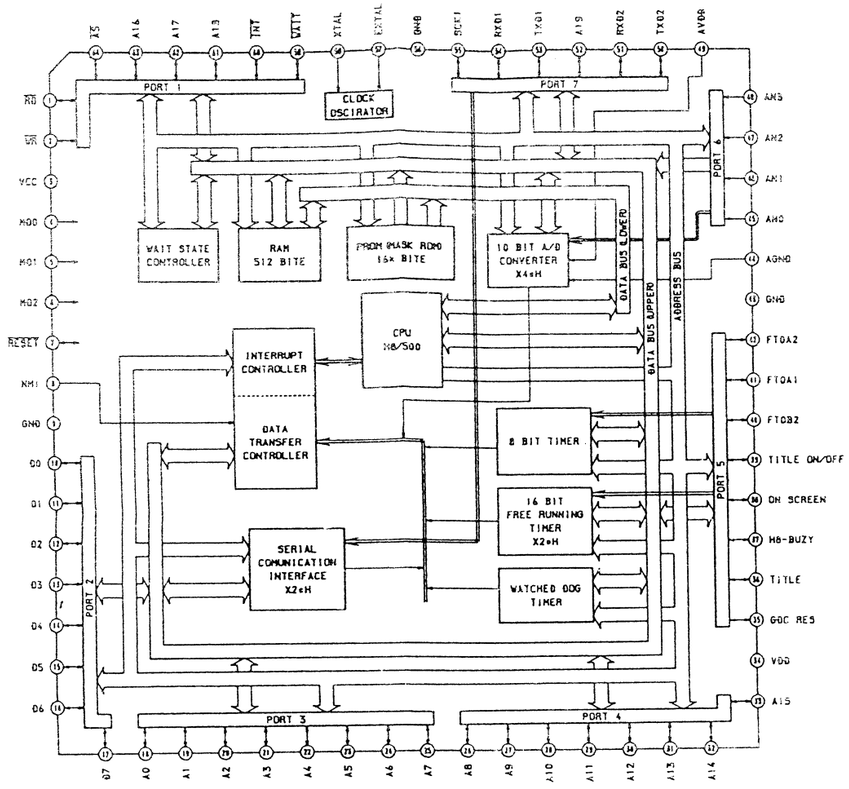
IC304 CXD2564AM



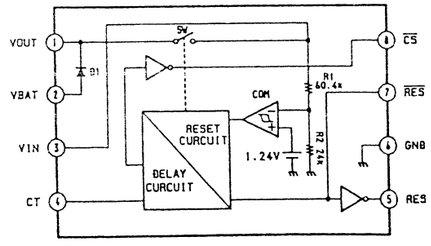
IC504 CXD8481Q



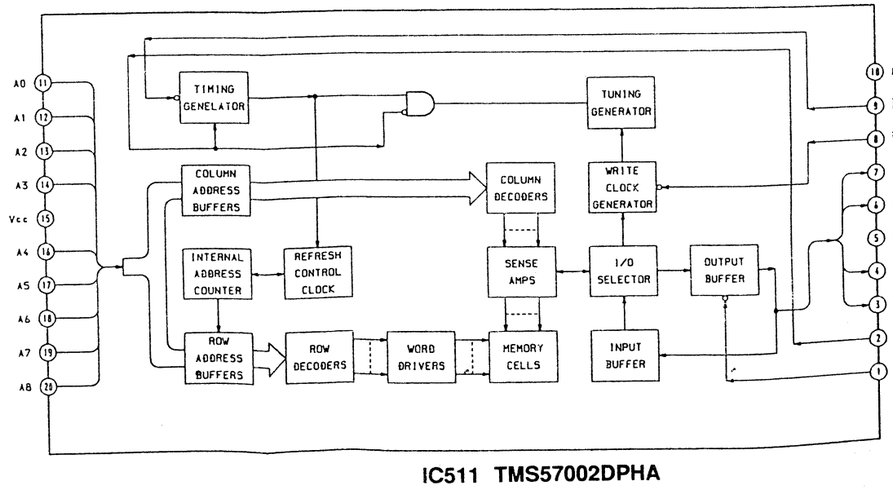
IC506 HD6435208A00F



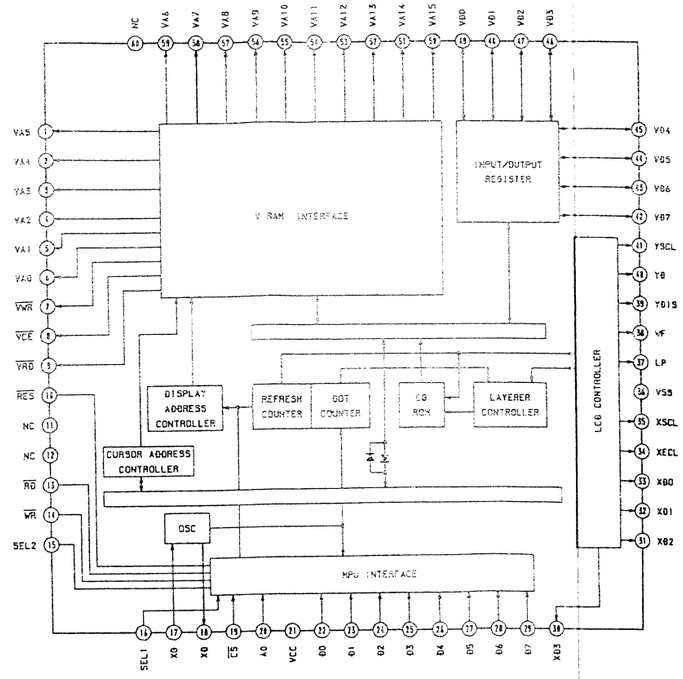
IC509 M62021FP



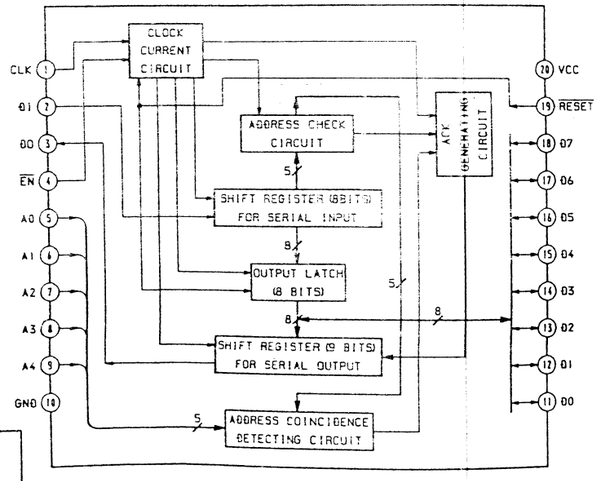
IC510 CAT514256B-70ZS



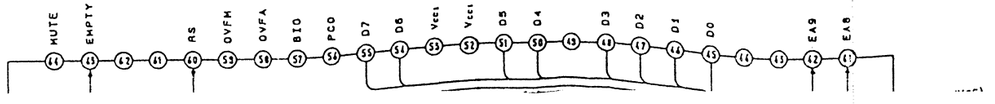
IC512 SED1335FOB



IC515 M66009FP



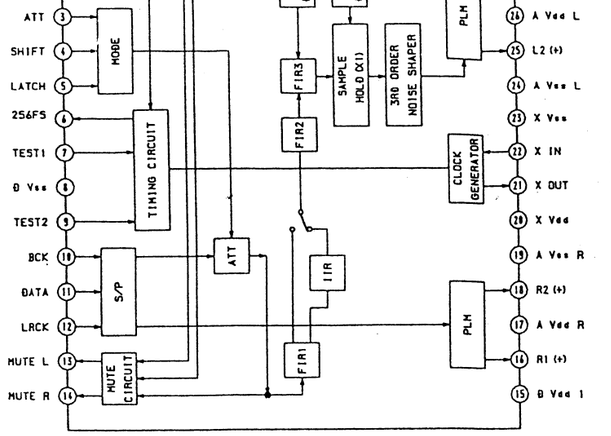
IC511 TMS57002DPHA

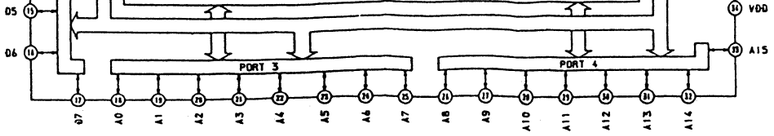


2-5. IC I

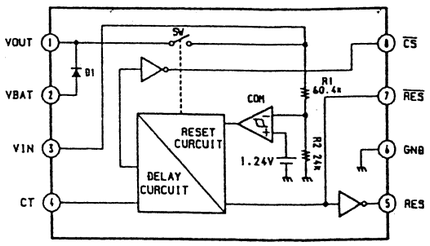
- IC502 D
  Digital s

Pin No.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

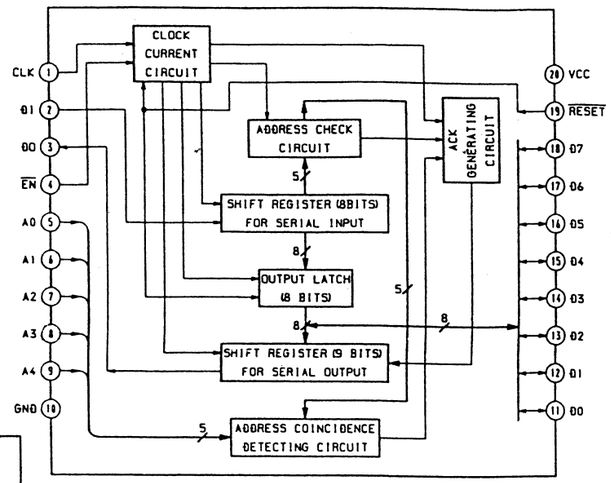




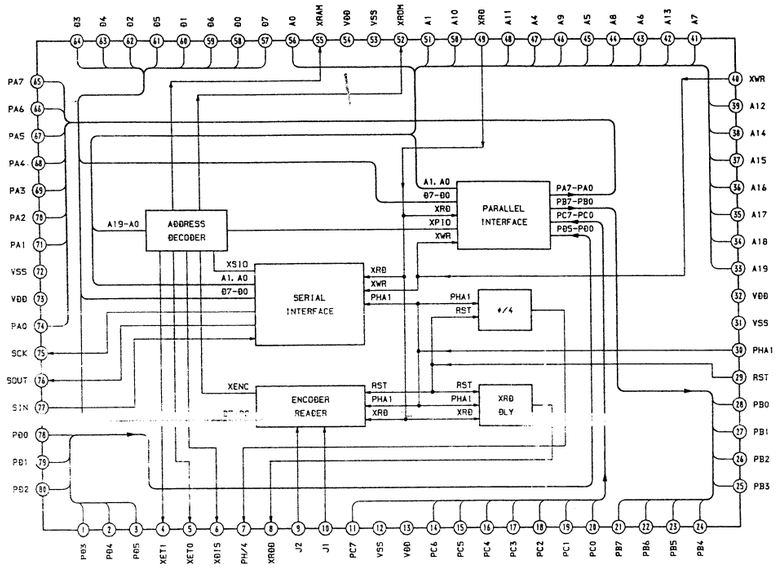
IC509 M62021FP



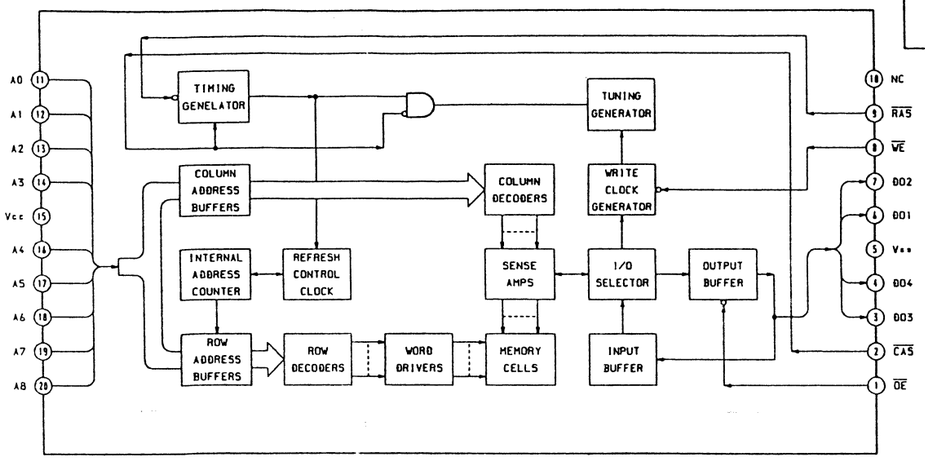
IC515 M66009FP



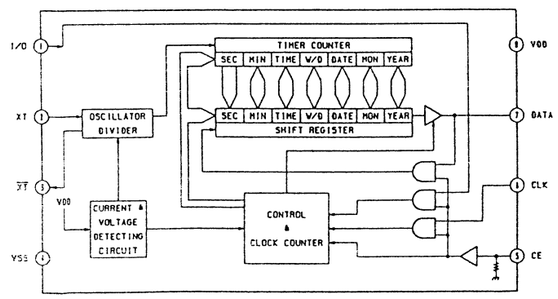
IC504 CXD8481Q



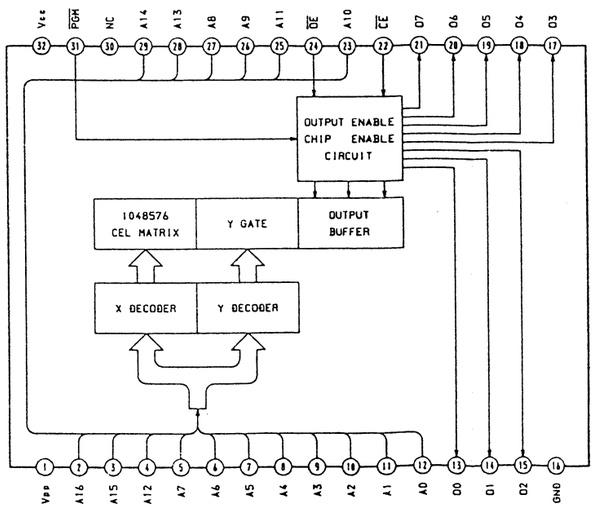
IC510 CAT514256B-70ZS



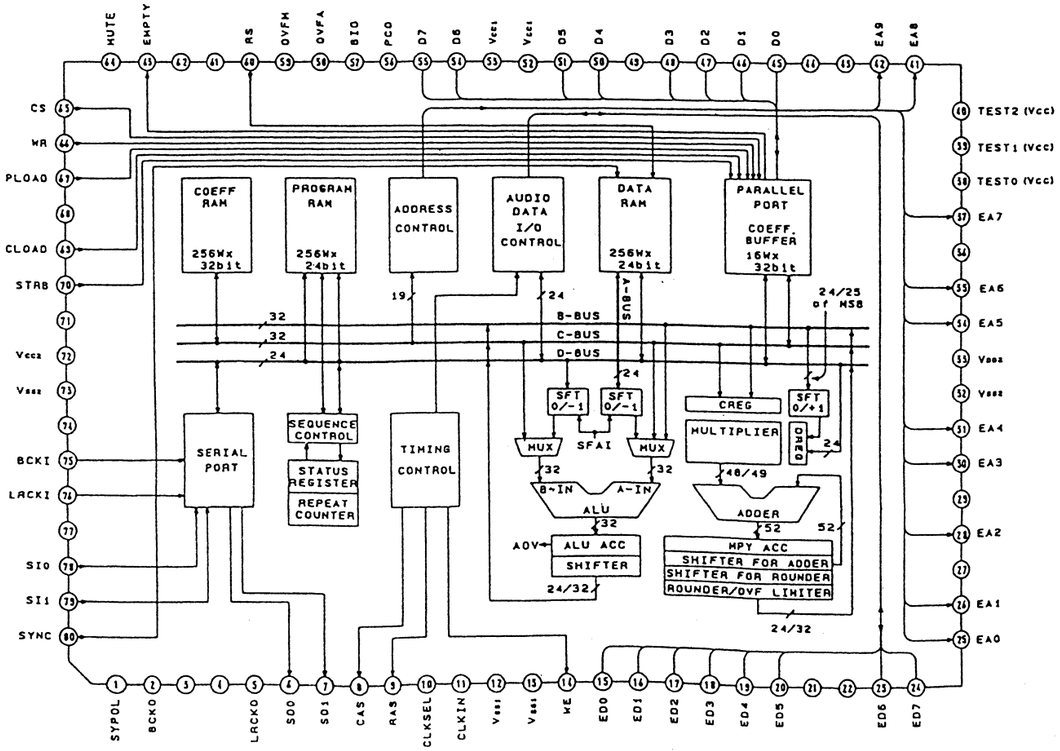
IC505 NJU6355EM-T1



IC507 LE27C1001F-GP5-E1



IC511 TMS57002DPHA



2-5. IC

- IC502
Digital

Pin No.	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	

2-5. IC PIN FUNCTION

- **IC502 Digital Signal Processor (CXD2705AQ)**
  Digital signal processor (DSP) coping with 2-channel which has equalizer, dynamics, and reverb functions in one chip.

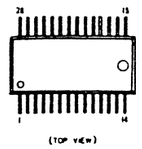
Pin No.	Pin Name	I/O	Function
1	EA0	O	M5M411664 (D-RAM) address
2	Vss	–	GND
3	EA1	O	M5M411664 (D-RAM) address
4	EA2	O	
5	EA3	O	
6	EA4	O	
7	EA5	O	
8	EA6	O	
9	EA7	O	
10	EA8	O	D-RAM address. Not used (open).
11	TA7	I	Test pin. Connected to GND.
12	Vss	–	GND
13	TA6	I	Test pin. Connected to GND.
14	XRST	I	Reset input. "L": Reset.
15	SP0	O	Static port 0. Not used (open).
16	SP1	O	Static port 1. Not used (open).
17	SP2	O	Static port 2. Not used (open).
18	MOVF	O	MAC overflow signal output. Not used (open).
19	AOVF	O	ALU overflow signal output. Not used (open).
20	REDY	O	Ready-for-service signal output to CXD8481Q (gate array).
21	TRDT	O	Data output to CXD8481Q (gate array). Not used (open).
22	RVDT	I	Data input from CXD8481Q (gate array).
23	SCK	I	Shift clock input from CXD8481Q (gate array).
24	XLAT	I	Mode partition signal input from CXD8481Q (gate array).
25	TA5	I	Test pin. Connected to GND.
26	TA4	I	
27	BFOT	O	Clock buffer output to SN74HC74ANS
28	CLKO	O	Clock output (51.035MHz)
29	CLKI	I	Clock input (51.035MHz)
30	TA3	I	Test pin. Connected to GND.
31	TA2	I	
32	Vss2	–	GND
33	VDD0	–	+5V power supply
34	TA1	I	Test pin. Connected to GND.
35	TA0	I	
36	SOC	O	Serial data output. Not used (open).
37	SOB	O	Serial data output
38	SOA	O	Serial data output
39	SIB	I	Serial data input from TMS57002DPHA (digital signal processor).
40	SIA	I	Serial data input (serial data input from AD converter AK5369).

Pin No.	Pin Name	I/O	Function
41	LRCK0	I	LR clock input
42	LRCK1	I	
43	BCK0	I	Bit clock input
44	BCK1	I	
45	Vss3	–	GND
46	D2BK	O	1/2 divided bit clock output. Not used (open).
47	D2LR	O	1/2 divided LR clock output. Not used (open).
48	D4BK	O	1/4 divided bit clock output. Not used (open).
49	D4LR	O	1/4 divided LR clock output. Not used (open).
50	ED0	I/O	Data input/output with M5M411664 (D-RAM).
51	TST1	I	Test pin. Connected to GND.
52	Vss4	–	GND
53	TST0	I	Test pin. Connected to GND.
54	ED1	I/O	Data input/output with M5M411664 (D-RAM).
55	ED2	I/O	
56	ED3	I/O	
57	ED4	I/O	
58	ED5	I/O	
59	ED6	I/O	
60	ED7	I/O	
61	ED8	I/O	
62	ED9	I/O	
63	Vss5	–	GND
64	ED10	I/O	Data input/output with M5M411664 (D-RAM).
65	ED11	I/O	
66	XOE	O	Output enable output of M5M411664 (D-RAM). "L": Valid.
67	CAS	O	Column address strobe output of M5M411664 (D-RAM).
68	ED12	I/O	Data input/output with M5M411664 (D-RAM).
69	ED13	I/O	
70	ED15	I	Test pin. Connected to GND.
71	ED14	I	
72	Vss6	–	GND
73	VDD1	–	+5V power supply
74	TD13	I	Test pin. Connected to GND.
75	TD12	I	
76	ED14	I/O	Data input/output with M5M411664 (D-RAM).
77	ED15	I/O	
78	XWE	O	Write enable output of M5M411664 (D-RAM). "L": Valid.
79	RAS	O	Row address strobe output of M5M411664 (D-RAM).
80	EA9	O	D-RAM address. Not used (open).

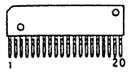
Pin No.	Pin Name	I/O	Function
41	LRCK0	I	LR clock input
42	LRCK1	I	
43	BCK0	I	Bit clock input
44	BCK1	I	
45	Vss3	–	GND
46	D2BK	O	1/2 divided bit clock output. Not used (open).
47	D2LR	O	1/2 divided LR clock output. Not used (open).
48	D4BK	O	1/4 divided bit clock output. Not used (open).
49	D4LR	O	1/4 divided LR clock output. Not used (open).
50	ED0	I/O	Data input/output with M5M411664 (D-RAM).
51	TST1	I	Test pin. Connected to GND.
52	Vss4	–	GND
53	TST0	I	Test pin. Connected to GND.
54	ED1	I/O	Data input/output with M5M411664 (D-RAM).
55	ED2	I/O	
56	ED3	I/O	
57	ED4	I/O	
58	ED5	I/O	
59	ED6	I/O	
60	ED7	I/O	
61	ED8	I/O	
62	ED9	I/O	
63	Vss5	–	GND
64	ED10	I/O	Data input/output with M5M411664 (D-RAM).
65	ED11	I/O	
66	XOE	O	Output enable output of M5M411664 (D-RAM). "L": Valid.
67	CAS	O	Column address strobe output of M5M411664 (D-RAM).
68	ED12	I/O	Data input/output with M5M411664 (D-RAM).
69	ED13	I/O	
70	ED15	I	Test pin. Connected to GND.
71	ED14	I	
72	Vss6	–	GND
73	VDD1	–	+5V power supply
74	TD13	I	Test pin. Connected to GND.
75	TD12	I	
76	ED14	I/O	Data input/output with M5M411664 (D-RAM).
77	ED15	I/O	
78	XWE	O	Write enable output of M5M411664 (D-RAM). "L": Valid.
79	RAS	O	Row address strobe output of M5M411664 (D-RAM).
80	EA9	O	D-RAM address. Not used (open).

2-6. SEMICONDUCTOR LEAD LAYOUTS

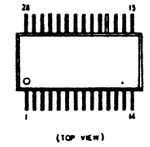
AK5369VS-T1



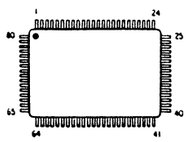
CAT514256B-70ZS



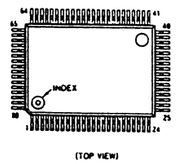
CXD2564AM
CXK58257AM-12LL-T6



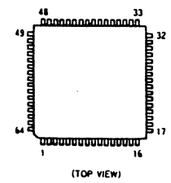
CXD2705AQ



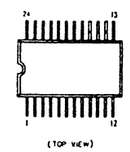
CXD8481Q



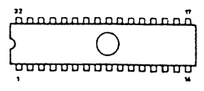
HD6435208F



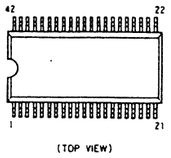
LC3517BML-12



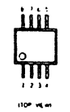
LE27C1001F-GP5-E1



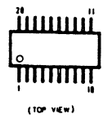
M5M411664TP-6



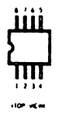
M62021FP-600C
NJU6355EM-T1



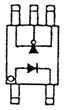
M66009FP



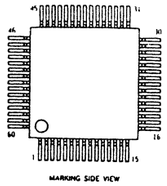
NJM4560M
RC4558PS



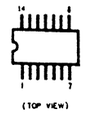
PC410



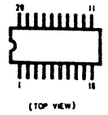
SED1335FOB



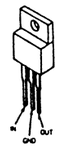
SN74HC00ANS
SN74LS05NS-ELL2000



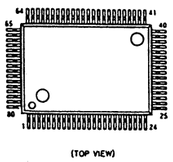
SN74HC74ANS



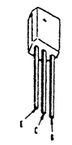
TA7805S



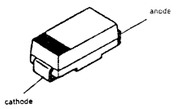
TMS57002DPHA



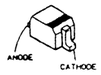
2SA1344



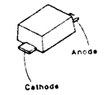
EC10DS2



DTZ5.6B
1SS352



MA8027



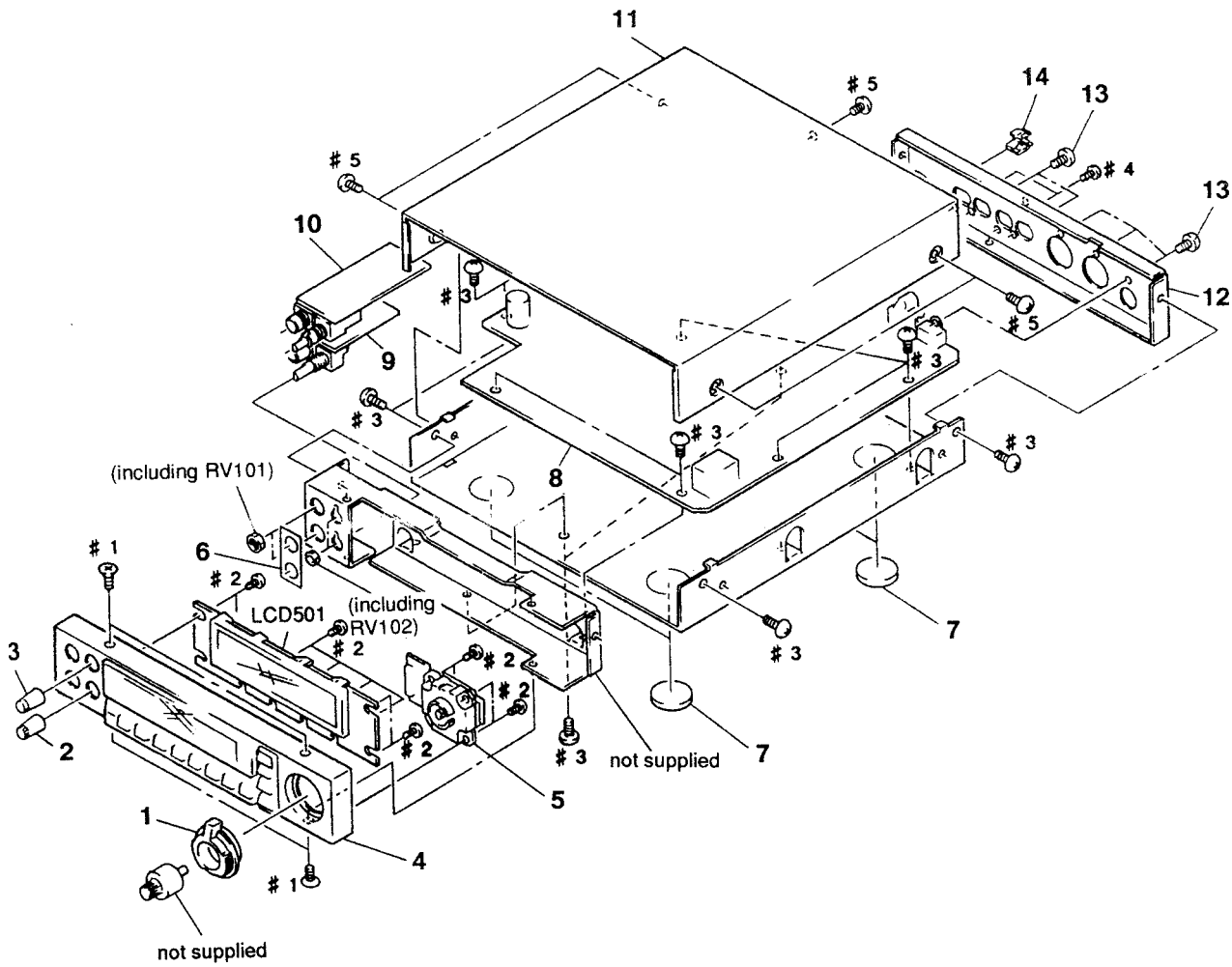
1SS226

SECTION 3
EXPLODED VIEW

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

3-1. CABINET ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	4-961-320-01	KNOB (A)	
2	4-961-321-11	KNOB (B)	
3	4-961-321-01	KNOB (B)	
4	X-4944-037-1	PANEL ASSY, FRONT	
* 5	1-649-451-13	ENCODER BOARD	
6	4-962-901-01	SHEET, BLIND	
7	4-962-567-01	FOOT	
* 8	A-4369-765-A	MAIN BOARD, COMPLETE	
* 9	1-649-452-13	HEADPHONE BOARD	
* 10	1-649-454-11	INPUT BOARD	
* 11	4-961-314-01	CASE	
* 12	4-961-313-11	PANEL, BACK	
13	3-704-515-21	SCREW (BV/RING)	
14	4-962-113-01	CLAMP	
LCD501	1-810-282-11	DISPLAY PANEL, LIQUID CRYSTAL	

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- CND : Canadian model

Ref. No.	Part No.	Description			Remark
*	1-649-451-13	ENCODER BOARD			
		**********			
		< CAPACITOR >			
C541	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C542	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C543	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C544	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< RESISTOR >			
R573	1-216-041-00	METAL CHIP	470	5% 1/10W	
R574	1-216-041-00	METAL CHIP	470	5% 1/10W	
R575	1-216-041-00	METAL CHIP	470	5% 1/10W	
R576	1-216-041-00	METAL CHIP	470	5% 1/10W	
		< SWITCH >			
S501	1-467-305-11	ENCODER, ROTARY (JOG, SHUTTLE)			
**********					
*	1-649-452-13	HEADPHONE BOARD			
		**********			
		< CAPACITOR >			
C138	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C238	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< JACK >			
J104	1-750-972-11	JACK (LARGE TYPE) (PHONES)			
		< COIL >			
L122	1-410-377-31	INDUCTOR CHIP	4.7uH		
L222	1-410-377-31	INDUCTOR CHIP	4.7uH		
		< VARIABLE RESISTOR >			
RV102	1-223-507-11	RES, VAR, CARBON 10K/10K (PHONES)			
**********					

Ref. No.	Part No.	Description			Remark
*	1-649-454-11	INPUT BOARD			
		**********			
		< CAPACITOR >			
C401	1-124-257-00	ELECT	2.2uF	20%	50V
C403	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C404	1-124-261-00	ELECT	10uF	20%	50V
C405	1-126-301-11	ELECT	1uF	20%	50V
C406	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C407	1-124-261-00	ELECT	10uF	20%	50V
C408	1-124-261-00	ELECT	10uF	20%	50V
C410	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< IC >			
IC401	8-759-100-96	IC uPC4558G2			
		< JACK >			
J401	1-750-972-11	JACK (LARGE TYPE) (DC IN)			
		< RESISTOR >			
R401	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R402	1-216-059-00	METAL CHIP	2.7K	5% 1/10W	
R403	1-216-089-00	METAL GLAZE	47K	5% 1/10W	
R405	1-216-121-00	METAL CHIP	1M	5% 1/10W	
		< VARIABLE RESISTOR >			
RV401	1-223-508-11	RES, VAR, CARBON 10K (INPUT, POWER)			
**********					
*	A-4369-765-A	MAIN BOARD, COMPLETE			
		**********			
	1-540-107-11	SOCKET, IC 32P			
	7-682-548-04	SCREW +BVTT 3X8 (S)			
		< BATTERY >			
BA501	1-528-225-11	BATTERY, LITHIUM			
		< CAPACITOR >			
C101	1-126-006-11	ELECT	22uF	20%	16V
C102	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C103	1-165-319-11	CERAMIC CHIP	0.1uF		50V

MAIN

Ref.No.	Part No.	Description			Remark
C104	1-136-153-00	FILM	0.01uF	5%	50V
C109	1-126-006-11	ELECT	22uF	20%	16V
C110	1-126-006-11	ELECT	22uF	20%	16V
C121	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C122	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C123	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C124	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C125	1-126-157-11	ELECT	10uF	20%	16V
C126	1-130-479-00	MYLAR	0.0047uF	5%	50V
C127	1-130-472-00	MYLAR	0.0012uF	5%	50V
C128	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C129	1-126-022-11	ELECT	47uF	20%	16V
C130	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C131	1-124-995-11	ELECT	220uF	20%	10V
C135	1-124-477-11	ELECT	47uF	20%	25V
C202	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C203	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C204	1-136-153-00	FILM	0.01uF	5%	50V
C210	1-126-157-11	ELECT	10uF	20%	16V
C211	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C213	1-126-006-11	ELECT	22uF	20%	16V
C214	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C215	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C221	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C222	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C223	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C224	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C225	1-126-157-11	ELECT	10uF	20%	16V
C226	1-130-479-00	MYLAR	0.0047uF	5%	50V
C227	1-130-472-00	MYLAR	0.0012uF	5%	50V
C228	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C229	1-126-022-11	ELECT	47uF	20%	16V
C230	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C231	1-124-995-11	ELECT	220uF	20%	10V
C235	1-124-477-11	ELECT	47uF	20%	25V
C301	1-126-157-11	ELECT	10uF	20%	16V
C302	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C303	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C304	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C305	1-126-157-11	ELECT	10uF	20%	16V
C306	1-126-022-11	ELECT	47uF	20%	16V
C307	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C308	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C309	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C310	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C311	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C312	1-126-157-11	ELECT	10uF	20%	16V
C313	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C314	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C315	1-126-023-11	ELECT	100uF	20%	16V
C316	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C317	1-126-023-11	ELECT	100uF	20%	16V
C318	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C319	1-126-023-11	ELECT	100uF	20%	16V
C320	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C321	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C322	1-126-023-11	ELECT	100uF	20%	16V
C324	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C325	1-136-165-00	FILM	0.1uF	5%	50V
C326	1-126-157-11	ELECT	10uF	20%	16V
C327	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C328	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C501	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C502	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C503	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C504	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C505	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C506	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C507	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C508	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C509	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C510	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C511	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C512	1-124-442-00	ELECT	330uF	20%	6.3V
C513	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C514	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C515	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C516	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C517	1-124-443-00	ELECT	100uF	20%	10V
C518	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C519	1-124-927-11	ELECT	4.7uF	20%	100V
C520	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C521	1-124-907-11	ELECT	10uF	20%	50V
C522	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C523	1-124-442-00	ELECT	330uF	20%	6.3V
C524	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C525	1-124-472-11	ELECT	470uF	20%	10V
C526	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C527	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C528	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C529	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C530	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C531	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C532	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C533	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C534	1-124-907-11	ELECT	10uF	20%	50V
C535	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C536	1-124-443-00	ELECT	100uF	20%	10V
C537	1-124-443-00	ELECT	100uF	20%	10V
C538	1-165-319-11	CERAMIC CHIP	0.1uF		50V

Ref.No.	Part No.	Description			Remark
C539	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C540	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C545	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C546	1-124-443-00	ELECT	100uF	20%	10V
C547	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C548	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C549	1-124-907-11	ELECT	10uF	20%	50V
C550	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C552	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C553	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C901	1-124-360-00	ELECT	1000uF	20%	16V
C902	1-126-936-11	ELECT	3300uF	20%	16V
C903	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C904	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C905	1-124-621-11	ELECT	3300uF	20%	6.3V
C906	1-124-360-00	ELECT	1000uF	20%	16V
C907	1-124-997-11	ELECT	470uF	20%	10V
C908	1-124-997-11	ELECT	470uF	20%	10V
C909	1-124-997-11	ELECT	470uF	20%	10V
C910	1-126-936-11	ELECT	3300uF	20%	16V
C911	1-126-157-11	ELECT	10uF	20%	16V
C1006	1-130-472-00	MYLAR	0.0012uF	5%	50V
C1010	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< CONNECTOR >			
CN103	1-691-771-11	PLUG (MICRO CONNECTOR) 9P			
* CN104	1-564-342-11	PIN, CONNECTOR 8P			
* CN105	1-568-842-11	SOCKET, CONNECTOR 27P			
CN106	1-691-770-11	PLUG (MICRO CONNECTOR) 8P			
CN501	1-750-971-11	CONNECTOR, DIN 5P			
* CN502	1-569-003-11	SOCKET, CONNECTOR 8P			
		< COMPOSITION CIRCUIT BLOCK >			
CP901	1-467-363-11	CONVERTER UNIT, DC-DC			
		< DIODE >			
D201	8-719-017-73	DIODE	MA8027		
D202	8-719-017-73	DIODE	MA8027		
D231	8-719-016-74	DIODE	1SS352		
D501	8-719-016-74	DIODE	1SS352		
D502	8-719-016-74	DIODE	1SS352		
D503	8-719-016-74	DIODE	1SS352		
D504	8-719-016-74	DIODE	1SS352		
D505	8-719-800-76	DIODE	1SS226		
D506	8-719-977-03	DIODE	DTZ5.6B		
D901	8-719-210-33	DIODE	EC10DS2		
D902	8-719-210-33	DIODE	EC10DS2		
D903	8-719-977-03	DIODE	DTZ5.6B		
D904	8-719-210-33	DIODE	EC10DS2		

Ref.No.	Part No.	Description	Remark
		< PLATE >	
* E101	4-870-539-00	PLATE, GROUND	
* E108	4-870-539-00	PLATE, GROUND	
		< IC >	
IC101	8-759-100-96	IC uPC4558G2	
IC121	8-759-100-96	IC uPC4558G2	
IC122	8-759-745-64	IC NJM4560M	
IC201	8-759-100-96	IC uPC4558G2	
IC221	8-759-100-96	IC uPC4558G2	
IC301	8-759-191-21	IC AK5369VS-T1	
IC302	8-759-927-46	IC SN74HC00ANS	
IC303	8-759-925-90	IC SN74HC74ANS	
IC304	8-752-359-50	IC CXD2564AM	
IC501	8-759-085-03	IC M5M411664TP-6	
IC502	8-752-352-30	IC CXD2705AQ	
IC503	8-759-925-90	IC SN74HC74ANS	
IC504	8-759-188-95	IC CXD8481Q	
IC505	8-759-188-93	IC NJU6355EM-T1	
IC506	8-759-048-99	IC HD6435208F	
IC507	8-759-261-94	IC LE27C1001F-GP5-E1	
IC508	8-752-341-85	IC CXK58257AM-12LL-T6	
IC509	8-759-637-07	IC M62021FP-600C	
IC510	8-759-188-94	IC CAT514256B-70ZS	
IC511	8-759-189-00	IC TMS57002DPHA	
IC512	8-759-188-96	IC SED1335F0B	
IC513	8-759-804-87	IC LC3517BML-12	
IC514	8-759-190-44	IC SN74LS05NS-ELL2000	
IC515	8-759-191-15	IC M66009FP	
IC901	8-759-231-53	IC TA7805S	
		< JACK >	
J101	1-750-973-11	JACK (LARGE TYPE) (2 GANG) (INPUT, PEDAL IN)	
J103	1-750-973-11	JACK (LARGE TYPE) (2 GANG) (CH1/CH2 OUT)	
J901	1-691-452-11	JACK, DC (POLARITY UNIFIET TYPE) (DC IN)	
		< COIL >	
L101	1-410-377-31	INDUCTOR CHIP 4.7uH	
L121	1-410-377-31	INDUCTOR CHIP 4.7uH	
L221	1-410-377-31	INDUCTOR CHIP 4.7uH	
L301	1-410-377-31	INDUCTOR CHIP 4.7uH	
L302	1-412-788-41	INDUCTOR CHIP 10uH	
L303	1-412-788-41	INDUCTOR CHIP 10uH	
L401	1-410-377-31	INDUCTOR CHIP 4.7uH	
L501	1-410-377-31	INDUCTOR CHIP 4.7uH	
L502	1-410-377-31	INDUCTOR CHIP 4.7uH	
L503	1-410-377-31	INDUCTOR CHIP 4.7uH	
L504	1-410-377-31	INDUCTOR CHIP 4.7uH	
L505	1-410-377-31	INDUCTOR CHIP 4.7uH	

MAIN

Ref.No.	Part No.	Description			Remark
L506	1-410-377-31	INDUCTOR CHIP	4.7uH		
L507	1-412-776-11	INDUCTOR	1uH		
L508	1-410-377-31	INDUCTOR CHIP	4.7uH		
L509	1-410-377-31	INDUCTOR CHIP	4.7uH		
L510	1-410-377-31	INDUCTOR CHIP	4.7uH		
L511	1-412-788-41	INDUCTOR CHIP	10uH		
L512	1-412-788-41	INDUCTOR CHIP	10uH		
L513	1-412-788-41	INDUCTOR CHIP	10uH		
L514	1-410-377-31	INDUCTOR CHIP	4.7uH		
L515	1-410-377-31	INDUCTOR CHIP	4.7uH		
L516	1-412-788-41	INDUCTOR CHIP	10uH		
		< PHOTO INTERUPTER >			
PH501	8-749-924-62	PHOTO COUPLER PC410			
PH502	8-749-924-62	PHOTO COUPLER PC410			
		< TRANSISTOR >			
Q121	8-729-422-29	TRANSISTOR	2SD601A-S		
Q122	8-729-422-29	TRANSISTOR	2SD601A-S		
Q221	8-729-422-29	TRANSISTOR	2SD601A-S		
Q222	8-729-422-29	TRANSISTOR	2SD601A-S		
Q501	8-729-805-41	TRANSISTOR	2SC3398		
Q502	8-729-805-41	TRANSISTOR	2SC3398		
Q503	8-729-805-41	TRANSISTOR	2SC3398		
Q504	8-729-805-65	TRANSISTOR	2SA1344		
Q505	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q506	8-729-805-41	TRANSISTOR	2SC3398		
Q507	8-729-805-41	TRANSISTOR	2SC3398		
Q901	8-729-904-86	TRANSISTOR	2SB1197K-Q		
		< RESISTOR >			
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-017-00	METAL CHIP	47	5%	1/10W
R121	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R122	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R123	1-216-079-00	METAL CHIP	18K	5%	1/10W
R124	1-216-079-00	METAL CHIP	18K	5%	1/10W
R125	1-216-077-00	METAL CHIP	15K	5%	1/10W
R126	1-216-077-00	METAL CHIP	15K	5%	1/10W
R127	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R128	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R130	1-216-105-00	METAL CHIP	220K	5%	1/10W
R131	1-216-033-00	METAL CHIP	220	5%	1/10W
R132	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R133	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R134	1-216-033-00	METAL CHIP	220	5%	1/10W
R135	1-216-041-00	METAL CHIP	470	5%	1/10W
R136	1-216-009-00	METAL CHIP	22	5%	1/10W

Ref.No.	Part No.	Description			Remark
R137	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R138	1-216-073-00	METAL CHIP	10K	5%	1/10W
R139	1-216-085-00	METAL CHIP	33K	5%	1/10W
R140	1-216-021-00	METAL CHIP	68	5%	1/10W
R202	1-216-097-00	METAL CHIP	100K	5%	1/10W
R203	1-216-073-00	METAL CHIP	10K	5%	1/10W
R205	1-216-017-00	METAL CHIP	47	5%	1/10W
R211	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R212	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R213	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R214	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R221	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R222	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R223	1-216-079-00	METAL CHIP	18K	5%	1/10W
R224	1-216-079-00	METAL CHIP	18K	5%	1/10W
R225	1-216-077-00	METAL CHIP	15K	5%	1/10W
R226	1-216-077-00	METAL CHIP	15K	5%	1/10W
R227	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R228	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R230	1-216-105-00	METAL CHIP	220K	5%	1/10W
R231	1-216-033-00	METAL CHIP	220	5%	1/10W
R232	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R233	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R234	1-216-033-00	METAL CHIP	220	5%	1/10W
R235	1-216-041-00	METAL CHIP	470	5%	1/10W
R237	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R238	1-216-073-00	METAL CHIP	10K	5%	1/10W
R239	1-216-085-00	METAL CHIP	33K	5%	1/10W
R240	1-216-021-00	METAL CHIP	68	5%	1/10W
R301	1-216-017-00	METAL CHIP	47	5%	1/10W
R302	1-216-113-00	METAL CHIP	470K	5%	1/10W
R303	1-216-041-00	METAL CHIP	470	5%	1/10W
R304	1-216-017-00	METAL CHIP	47	5%	1/10W
R305	1-216-017-00	METAL CHIP	47	5%	1/10W
R306	1-216-017-00	METAL CHIP	47	5%	1/10W
R307	1-216-041-00	METAL CHIP	470	5%	1/10W
R308	1-216-041-00	METAL CHIP	470	5%	1/10W
R309	1-216-033-00	METAL CHIP	220	5%	1/10W
R310	1-216-049-00	METAL CHIP	1K	5%	1/10W
R311	1-216-049-00	METAL CHIP	1K	5%	1/10W
R312	1-216-049-00	METAL CHIP	1K	5%	1/10W
R313	1-216-017-00	METAL CHIP	47	5%	1/10W
R314	1-216-041-00	METAL CHIP	470	5%	1/10W
R316	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R317	1-216-041-00	METAL CHIP	470	5%	1/10W
R318	1-216-017-00	METAL CHIP	47	5%	1/10W
R319	1-216-009-00	METAL CHIP	22	5%	1/10W
R320	1-216-017-00	METAL CHIP	47	5%	1/10W
R321	1-216-009-00	METAL CHIP	22	5%	1/10W
R322	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

Ref.No.	Part No.	Description			Remark
R323	1-216-049-00	METAL CHIP	1K	5%	1/10W
R325	1-216-041-00	METAL CHIP	470	5%	1/10W
R501	1-216-041-00	METAL CHIP	470	5%	1/10W
R502	1-216-041-00	METAL CHIP	470	5%	1/10W
R503	1-216-041-00	METAL CHIP	470	5%	1/10W
R504	1-216-041-00	METAL CHIP	470	5%	1/10W
R505	1-216-041-00	METAL CHIP	470	5%	1/10W
R506	1-216-017-00	METAL CHIP	47	5%	1/10W
R507	1-216-041-00	METAL CHIP	470	5%	1/10W
R508	1-216-041-00	METAL CHIP	470	5%	1/10W
R509	1-216-041-00	METAL CHIP	470	5%	1/10W
R510	1-216-041-00	METAL CHIP	470	5%	1/10W
R511	1-216-041-00	METAL CHIP	470	5%	1/10W
R512	1-216-041-00	METAL CHIP	470	5%	1/10W
R513	1-216-041-00	METAL CHIP	470	5%	1/10W
R514	1-216-041-00	METAL CHIP	470	5%	1/10W
R515	1-216-041-00	METAL CHIP	470	5%	1/10W
R516	1-216-041-00	METAL CHIP	470	5%	1/10W
R517	1-216-041-00	METAL CHIP	470	5%	1/10W
R518	1-216-041-00	METAL CHIP	470	5%	1/10W
R519	1-216-041-00	METAL CHIP	470	5%	1/10W
R520	1-216-073-00	METAL CHIP	10K	5%	1/10W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W
R522	1-216-073-00	METAL CHIP	10K	5%	1/10W
R523	1-216-073-00	METAL CHIP	10K	5%	1/10W
R524	1-216-073-00	METAL CHIP	10K	5%	1/10W
R525	1-216-121-00	METAL CHIP	1M	5%	1/10W
R526	1-216-073-00	METAL CHIP	10K	5%	1/10W
R527	1-216-121-00	METAL CHIP	1M	5%	1/10W
R528	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R529	1-216-073-00	METAL CHIP	10K	5%	1/10W
R530	1-216-073-00	METAL CHIP	10K	5%	1/10W
R531	1-216-041-00	METAL CHIP	470	5%	1/10W
R532	1-216-041-00	METAL CHIP	470	5%	1/10W
R533	1-216-073-00	METAL CHIP	10K	5%	1/10W
R534	1-216-033-00	METAL CHIP	220	5%	1/10W
R535	1-216-047-00	METAL CHIP	820	5%	1/10W
R536	1-216-033-00	METAL CHIP	220	5%	1/10W
R537	1-216-073-00	METAL CHIP	10K	5%	1/10W
R538	1-216-073-00	METAL CHIP	10K	5%	1/10W
R539	1-216-073-00	METAL CHIP	10K	5%	1/10W
R540	1-216-033-00	METAL CHIP	220	5%	1/10W
R541	1-216-033-00	METAL CHIP	220	5%	1/10W
R542	1-216-033-00	METAL CHIP	220	5%	1/10W
R543	1-216-033-00	METAL CHIP	220	5%	1/10W
R544	1-216-047-00	METAL CHIP	820	5%	1/10W
R545	1-216-073-00	METAL CHIP	10K	5%	1/10W
R546	1-216-073-00	METAL CHIP	10K	5%	1/10W
R547	1-216-049-00	METAL CHIP	1K	5%	1/10W
R548	1-216-049-00	METAL CHIP	1K	5%	1/10W
R549	1-216-041-00	METAL CHIP	470	5%	1/10W
R550	1-216-041-00	METAL CHIP	470	5%	1/10W
R551	1-216-041-00	METAL CHIP	470	5%	1/10W
R552	1-216-041-00	METAL CHIP	470	5%	1/10W
R553	1-216-041-00	METAL CHIP	470	5%	1/10W
R554	1-216-041-00	METAL CHIP	470	5%	1/10W
R555	1-216-041-00	METAL CHIP	470	5%	1/10W
R556	1-216-041-00	METAL CHIP	470	5%	1/10W
R557	1-216-041-00	METAL CHIP	470	5%	1/10W
R558	1-216-041-00	METAL CHIP	470	5%	1/10W
R559	1-216-041-00	METAL CHIP	470	5%	1/10W
R560	1-216-041-00	METAL CHIP	470	5%	1/10W
R561	1-216-041-00	METAL CHIP	470	5%	1/10W
R562	1-216-041-00	METAL CHIP	470	5%	1/10W
R563	1-216-041-00	METAL CHIP	470	5%	1/10W
R564	1-216-041-00	METAL CHIP	470	5%	1/10W
R565	1-216-041-00	METAL CHIP	470	5%	1/10W
R566	1-216-041-00	METAL CHIP	470	5%	1/10W
R567	1-216-041-00	METAL CHIP	470	5%	1/10W
R568	1-216-041-00	METAL CHIP	470	5%	1/10W
R569	1-216-041-00	METAL CHIP	470	5%	1/10W
R570	1-216-041-00	METAL CHIP	470	5%	1/10W
R571	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R572	1-216-073-00	METAL CHIP	10K	5%	1/10W
R577	1-216-041-00	METAL CHIP	470	5%	1/10W
R578	1-216-041-00	METAL CHIP	470	5%	1/10W
R579	1-216-041-00	METAL CHIP	470	5%	1/10W
R580	1-216-041-00	METAL CHIP	470	5%	1/10W
R581	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R582	1-216-073-00	METAL CHIP	10K	5%	1/10W
R583	1-216-097-00	METAL CHIP	100K	5%	1/10W
R584	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R901	1-216-035-00	METAL CHIP	270	5%	1/10W
R902	1-217-587-00	CONDUCTOR	0.01		1/4W
R1001	1-216-295-00	METAL CHIP	0	5%	1/10W
R1002	1-216-295-00	METAL CHIP	0	5%	1/10W
R1004	1-216-295-00	METAL CHIP	0	5%	1/10W
R1005	1-216-295-00	METAL CHIP	0	5%	1/10W

< TRANSFORMER >

T1	1-464-497-11	INVERTER, DC-AC

< VIBRATOR >

X501	1-578-667-11	VIBRATOR, CRYSTAL (49.152MHz)
X502	1-567-098-00	OSCILLATOR, CRYSTAL (32.768kHz)
X503	1-577-121-11	VIBRATOR, CRYSTAL (20MHz)

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		************	
LCD501	1-810-282-11	DISPLAY PANEL, LIQUID CRYSTAL	
		**********	
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-467-114-22	ADAPTOR, AC (AC-970)(US/CND)	
⚠	1-467-308-11	ADAPTOR, AC (AC-970)(AEP)	
⚠	1-467-528-11	ADAPTOR, AC (UK)	
	1-543-827-31	CLAMP, SLEEVE FERRITE	
	3-757-786-11	MANUAL, INSTRUCTION	
			(ENGLISH, FRENCH, GERMAN)
*	4-961-760-01	CUSHION	
*	4-961-764-11	INDIVIDUAL CARTON	
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-245-19	SCREW +KTP 3X6 TYPE2 NON-SLIT	
#2	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
#3	7-682-547-09	SCREW +BVTT 3X6 (S)	
#4	7-685-103-19	+ PTPWH (2X5)	
#5	7-685-546-19	SCREW +BTP 3X8 TYPE2 N-S	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

9-959-191-11

Sony Corporation
Audio Group

English
94A09Y0984-1
Printed in Germany
© 1994.1
Published by Audio Sector Quality Assurance Dept.